The Aragon Research Globe™ for Digital Transaction Management, 2022

Paper to Digital Transformation for Employee and Customer Engagement

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Topic: Digital transaction management (DTM)

Issue: Who are the DTM providers and how are they evolving?

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SUMMARY

Aragon Research releases its sixth Aragon Research Globe™ for digital transaction management (DTM), a market that has become one of the key ingredients for remote work via paperless transactions. The DTM Globe examines 20 major providers who are helping to digitize both customer and employee transactions.

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Introduction

As the world has settled into working remotely as the primary option, digital transaction management has become a key factor behind the success that enterprises have seen during the COVID era. Paperless transactions are the way that business gets done, and DTM providers have been a key reason for enterprise success during this time.

The DTM market continues to grow, and in 2021 more paper processes shifted to electronic or digital ones. At the same time, a few providers made investments to increase the level of automation and intelligence in their respective platforms. With all that said, there is still the need to migrate legacy paper content to digital. This remains a challenge to both governments that need paper and the enterprises subject to regulations that require it. This 2022 Aragon Research Globe evaluates 20 major DTM providers who are making a difference.

COVID Shifted Work to Be Fully Remote—The Role of DTM

Demand for digital transactions continued to surge in 2021, due to both COVID, remote work, and the fact that many enterprises can't continue to do business via paper. These factors helped the market grow at a slightly faster clip than before COVID. Business leaders can no longer avoid this issue and just by switching away from paper to basic signing, they are seeing the immediate benefit.

Timelines for digital transformation have been moved up and what was planned for 2023 and beyond now must happen in 2022. Additionally, in a post-pandemic world, enterprises are planning on investing in more tools to help them automate all of their business processes. Automating the creation of documents and contracts is not trivial, and the growth of the category shows that this transformational shift is well underway.

The organizations that have deployed DTM continue to outperform their competitors by offering a simplified customer journey that makes signing up for a service or completing a new purchase completely digital.

DTM Platforms and the Gradual Shift to Virtual Agents

Document assistants (chatbots) have not yet emerged, although the interview process that a few firms offer for form fill-in could be called a document assistant. Aragon's view is that a document assistant would help with the creation, preparation, and sending of documents for eSignature. Aragon continues to predict that some providers will offer a document assistant over the next two years.

Conversational AI is here to stay and with some work, a document assistant can be constructed that can chat with a human and perform tasks such as locate a document just by asking a question. The timeline for a DTM virtual agent projects that 2021-2022 are pilot stages. Full production of DTM virtual assistants will be in the 2023-2025 timeframe.

While interview assistants are becoming more common, Aragon feels that a document assistant will help a business user with more of their document creation needs (see Figure 1).

Prediction: *By YE 2023, DTM providers will offer a DTM virtual assistant to assist users with the automatic generation of content or the signing of a contract (40% probability).*
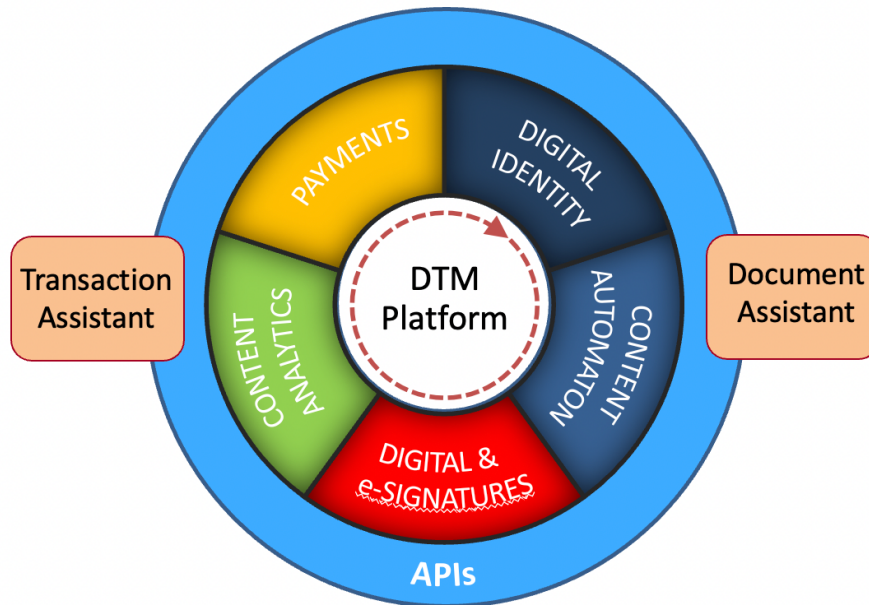
Figure 1: Transaction and document assistants will help people create documents and process transactions.

This is why when it comes to vertical markets, we see DTM with integrated payments as important for many types of transactions, including real estate and many forms of online subscriptions.

A New Market Emerges Focusing on Transformation

Customer feedback over the last few years has shown that the race to become fully digital is not about starting over—it is about transformation and leveraging existing capabilities in a new way. Based on this common customer need, and the introduction of new technology and service providers in the market, Aragon Research is identifying a new market that is focused specifically on providing the platform and business architecture services needed to enable business transformation.

We refer to this market as transformation platform as a service (tPaaS), and define this market as:

> *The tPaaS market consists of the set of providers of cloud services that specifically enable customers to reimagine and transform their business by providing business modeling and process modeling capabilities, critical digital business services (business architecture and design services, embedded AI, advanced analytics, automation), and integration to new and emerging technologies (IoT, robotics, connectors, etc.).*

tPaaS providers may provide public, private, and hybrid cloud services. In addition, we would expect leading tPaaS providers would support both business strategy and model architecture consulting services, in addition to any solution design and implementation services.

iPaaS Evolution
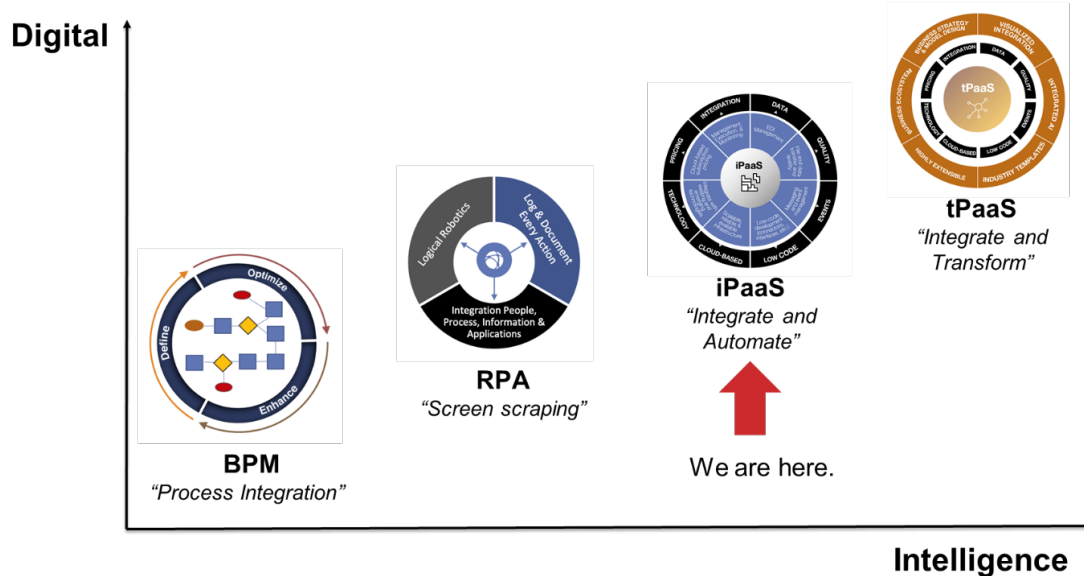
Figure 2: The iPaaS market evolution.

TPaaS and DTM

With transformation as a premise, enterprises need to look at their paper processes, look at their systems, and recognize the need to digitize the transaction. This mindset is more of a hybrid approach to transformation. This means that it isn't a clean sheet rip-and-replace that was what many were recommending just a few years ago.

TPaaS Is Enabled by APIs and Low-Code Integrations

Given that so many enterprises want to transform by integrating digital technology with existing services, this is the reason that APIs and low code integrations are key to digital transaction management. Low code enables non-programmers to create digital apps that are ready to run on a mobile device. These citizen developers represent a new trend in DTM—and this makes APIs even more important.

However, the ease of use of APIs—via low code interfaces—is what needs to be evaluated. Pluggability and drag and drop interfaces is what this is all about. The fact that so many DTM

providers are already part of existing app stores, such as Google, Microsoft, and Salesforce exemplify pre-configured integrations.

While APIs serve as connectors, many DTM providers are allowing their services to be integrated at an even deeper level, as part of a new application or service that the enterprise is building. Enterprises need to understand that the journey to fully paperless transactions may start out as basic and then become increasingly more digital over time (see Figure 3).
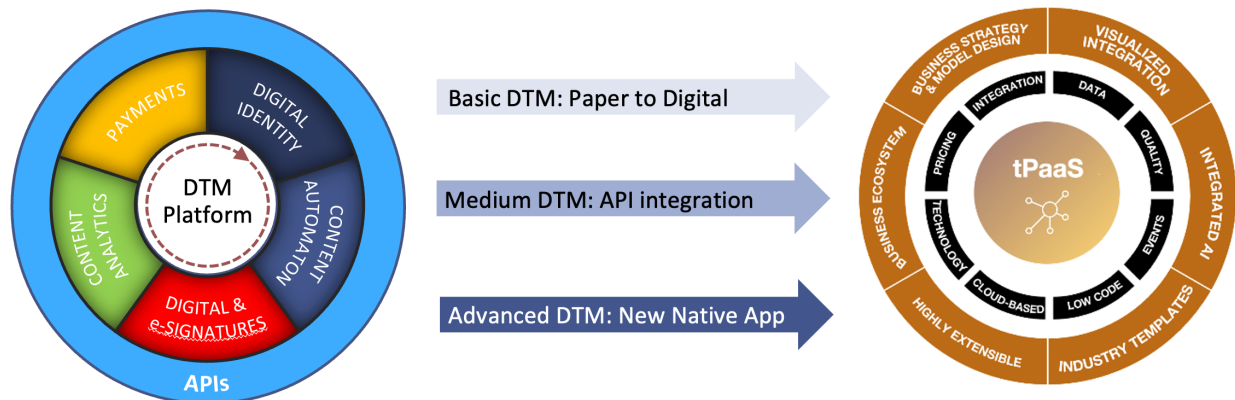
Figure 3: DTM offerings can serve as transformational services to help the enterprise on its digital journey.

The Need to Eliminate Paper—People and Forms

Forms and people are two of the areas where DTM can make a difference. Electronic signatures for hiring and approvals can speed up the hiring process, as well as promotions, stock options, and many other processes.

With content automation forms can be completely eliminated, making them online and streamlined. So, while the focus should be on eliminating paper, the follow-on is to automate the data collection process. Making the form electronic is a start at least, but many providers go further and help to automate the collection process by having an interview approach, similar to TurboTax for tax returns.

For both customer experience and employee engagement, the name of the game is simplicity and a better digital experience (see Figure 4 below). The race to offer a digital onboarding experience to new customers in retail and financial services has quickly escalated; delivering new, low-code mobile experiences that allow for a seamless and paperless experience are a must.

Focus on Customers

While sales has been a big focus for customer engagement, all customer facing documents should be evaluated to leverage basic and advanced DTM. The goal should be to go digital and shift toward e-Signatures as a first step. Eliminating paper in each of the stages of a sale can

accelerate booked revenue and accounts receivable. Many firms that have deployed basic eSignatures have seen a dramatic reduction in the time it takes to get a contract signed.

For employees and internal document processes, DTM can make a significant positive first impression through onboarding and all of the documents an associate needs to sign. So while customer engagement is the main first step in getting started with DTM, enterprises should not overlook the DTM benefits for employee-facing document processes.

The internal and external use cases that have the biggest impact include:

Customer Experiencer

- Sales Contracts
- Supplier Contracts
- Non-Disclosure Agreements
- Onboarding
- Partner and Supplier Onboarding
- Offline Purchases (via eSignature or Clickwrap)

Employee Engagement

- Employment Applications
- Offer Letters
- Confidentiality Agreements
- Stock Options
- Compensation Agreements
- Privacy Notices

Figure 4: Internal and external use cases for digitizing paper processes.

Digital Identity and Paper Processes

Digital identity remains an issue related to customer and employee onboarding. One of the last arenas that is proving tough to overcome is a common digital identity. Electronic signatures are still the number one type of signature, but now digital signatures have become a must-have option in Europe. eIDAS (electronic identification and trust services for electronic transactions in the internal market) has been a European standard for electronic and digital signatures since 2016. We have also seen new privacy laws emerge, such Europe's GDPR and the California Consumer Privacy Act, which went into effect on January 1, 2020.

eIDAS remains the most robust set of standards and is now required for companies doing business in Europe. Today, eIDAS offers four different types of verification that span from advanced electronic signature to full trust services.

While there is interest in blockchain, the Digital Identity Foundation (DIF) has an increased number of technology providers that have joined its ranks and there are a number of working groups focusing on pilot developments. In the meantime, biometric signatures, which use

fingerprint, retina, iris, or voice to verify a person's identify, have seen increased use. They are ideal in critical transactions where identity must be verified and certified.

Because the shift to a common digital identity is still a work in progress, each country still requires and accepts different types of identity. Europe remains ahead of the U.S. and Asia in what it will accept for a digital signature. In digital identity, Namirial made a big move with its recent acquisition of Netheos.

Clickwrap Starts to Drive Online Transactions

Enterprises are slowly coming to the realization that there is more to online transactions than just the checkout cart. Standard terms and conditions will no longer work for even basic purchases given nuances in products and the multitude of product variants that often have different terms and conditions.

The reason that CTPs work is that they speed up and simplify high volume contracts that need customization but don't require negotiation. For online purchases, this includes custom terms and conditions as well as warranty and service terms. Other examples include purchase orders, insurance policy acceptance documents, non-disclosure agreements, etc. CTPs can be used for high volume or for high value transactions. For very large volumes, threshold testing is recommended.

Content Automation Is the Next Wave—Going beyond eSignature

For many enterprises the basic need to shift from paper to digital means electronic signature is an acceptable way to get started. However, the need to automate the creation of documents and contracts still exist. For this reason, many DTM providers have incorporated content automation features that allow documents and contracts to be created in a more automated way. This can be unintended, meaning that the application does the creation or adjustment of the document or humans review the creation before it is sent for our signature.

Fill-in forms are giving way to guided interviews for information capture, accompanied by people that assist customers via chat or phone. Besides financial services,

Note 1: Digital Transaction Management and Clickwrap Transactions

Aragon identified the digital transaction management market in 2014, and since that time, it has grown significantly, with a focus on the process of taking paper-based document transactions and making them digital, including the electronic or digital signature process.

Clickwrap transaction platforms offer some of the same capabilities but are focused more on online transactions, which requires advanced content automation, click or signature approvals, and recording and archiving of the actual online transaction.

So, while DTM is the overall category, CTP is unique given the minimum capabilities as outlined in this Research Note.

industries that are transforming include retail, healthcare, and government. Automation is important because employees and customers also have higher expectations for a seamless experience. There is a demand for leveraging modern content platforms that can perform at higher levels of scalability and integration. Not every provider offers content automation, and that is why Aragon also has a separate Globe report on workflow and content automation.

Hybrid cloud offerings are increasing and, with them, the ability to do content automation in the cloud or on local servers that are containerized. The multi-cloud approach has arrived and now enterprises with large volumes of content being produced can still do so in a local data center and have the applications managed by the vendor they select. This choice for enterprises now means they can move faster with content automation projects. Note: not all vendors offer hybrid cloud containerized services.

The Rise of Content AI Will Streamline Identity, Onboarding, and More

As enterprise leaders tap into the emerging potential of content AI to augment the content processes spanning their business, these same tools will unlock a streamlined approach to managing identity, onboarding associates, and more use cases. Content AI enables the automated scanning, understanding, and analysis of documents to facilitate enterprise knowledge capture.

In the case of identity, content AI will make it easier to centralize identity information that may appear in different ways across different document types by leveraging unified repositories and context-aware data extraction. Similarly, it will ease the onboarding process by making training materials as well as administrative information more searchable.

Document and Image Analytics and the Race to Document Understanding

More providers are starting to focus on content AI, and we see the shift from document keyword understanding to full document understanding. One of the key shifts in the use of AI for document and content analytics is the ability for a business analyst to tune algorithms to focus on a certain type of document or a certain part of the document. Aragon feels that document/text analytics are poised to become embedded in nearly every WCA process by YE 2023. This race to intelligence represents a new component of the race to digitally-enabled business processes.

Contracts are one critical area where document understanding can make a difference. Contracts are the life of nearly every business deal, and they directly impact business outcomes. The contract life cycle management (CLM) tools of the past will not always offer the level of intelligence provided by offerings geared towards document understanding.

Today, contracts usually start with templates and often, there is no understanding between the good clauses that accelerate a deal, and the bad clauses that slow it down. In some cases, contracts created or reviewed by an inexperienced attorney can contain clauses that have a chance of being rejected by the other party. By making use of document understanding, enterprises can mine their existing contracts for revenue opportunities.

The areas where intelligent content analytics is making a difference include documents, images, and video. Here we will focus primarily on the impact of content analytics on documents/contracts, where AI can speed up a process or improve security (signature fraud).

Documents—document and contract analytics, also referred to as text analytics, is the ability of machine and deep learning applications to read and understand documents. There are tremendous opportunities in the document creation phase, particularly for contracts, as close analysis can provide a success or failure prediction on whether a clause should be used or not.

The shift to more complete document understanding via AI is the trend to watch. Enterprises need to evaluate providers to see where they are investing. While many DTM providers will leverage document analytics by partnering with large cloud providers such as Google, IBM, Amazon, or Microsoft, more will start to make their own set of investments. Conga, DocuSign, Nintex and Namirial have all made acquisitions in the last two years that bolster their content AI capabilities.

Image Analytics Tied to Signatures—in DTM, enterprises will need to interpret images and distinguish real images from fake images. While this is important in B2C environments today, this will also become important for areas such as insurance claims processing, retail shopping, and/or signature authentication. For DTM, while document analytics are important for contract understanding, image analytics will be important for fraud detection and for verification of both identity of a person and for verification of their electronic signature.

Video—for Online eNotary: Today, video verification with eNotary is done by the authorized eNotary looking at the person online and comparing that image to their picture on a government issued ID. Facial identity can be done now using computer vision algorithms and expect more providers to add these capabilities.

Enterprises should look for more opportunities to analyze video, as it is tied to identity verification for a digital transaction. For eNotary, DocuSign, Namirial, and Nintex all have been doing work in this area.

Payments Are Tied to Certain Use Cases

Payments are important for simplifying customer journeys. In many use cases, such as rental agreements, being able to capture the payment without adding an extra step is the way to streamline the customer experience.

Many DTM transactions include an initial payment. This is one of the bottlenecks of digital transactions. A growing number of providers are including payments as part of their solution. There are two approaches to doing this: adding a payment to a document agreement or building applications that leverage DTM provider APIs. Many of the providers in this report offer robust DTM APIs for integrations.

One of the providers in this report, eOriginal, helps to power digital loan applications. Increasingly, many firms are also taking the extra step to design entirely new digital services by leveraging a digital platform approach.

Cyber War, DTM, Data Residency, and Cloud Deployment options

Given cyber war and the all-out attack on private, public and government enterprises, security and data residency becomes front and center. Understanding where your documents are being stored is a larger issue. Choosing between types of clouds is a deployment choice, and given the need for private cloud (on-premise) for content storage, this may impact the DTM provider who is selected.

Multi-cloud—the ability to leverage different cloud environments—and hybrid cloud—leveraging public and private clouds—are now here. Enterprises need to understand how DTM providers deal with public and private cloud and how this affects data residency. For many reasons, more countries are requiring data to stay in their country, and that is forcing enterprises to look more closely at their DTM provider's capabilities.

While SaaS is great for many SMBs, there may be large enterprises that want both public and private cloud options. Enterprises often still keep mission-critical content processes in a private cloud, but the focus has shifted to containerization. With the advent of containerization, enterprises can now have more choices for keeping their content co-resident in their data center.

DTM Market Overview

Digital Transaction Management Basic and Advanced Capabilities

The DTM market continues to grow, and due to the sheer amount of paper transactions that exist today, basic DTM (eSignature) still represents a large part of the spending. However, large enterprises are now going further. Form replacement is being balanced against new digital services. Deployment choices are increasing as the various forms of cloud (public, private, hybrid) services to digitally manage a wide range of document-centric business processes are evolving quickly. Data governance will often dictate keeping content and data in the country of origin.

DTM goes beyond content and document management to include eSignatures, authentication, and nonrepudiation; document transfer and certification; workflow; data and forms integration and management; secure archiving that goes beyond records management; and a variety of meta-processes around managing electronic transactions and the documents associated with them.

DTM platforms are becoming more robust and go beyond just eSignature. Today major providers offer a number of capabilities that make them full platforms. See below and figure 5:

- Electronic and Digital Signatures
- Workflow and Content Automation
- Content AI
- Clickwrap Transactions
- API and Transformation Services
- Mobile Apps

Content AI (see above) is making its way into the DTM market. Moves over the last few years by both DocuSign, HelloSign and Namirial are showing up in products and new services, such as a streamlined onboarding application offered by Namirial.

The other big addition to DTM is clickwrap transactions, a response to the sheer growth of ecommerce transactions and the need to verify and ensure the terms of each transaction. While clickwrap is new, there are two providers, DocuSign and Ironclad, who both offer clickwrap as one of their product offerings.
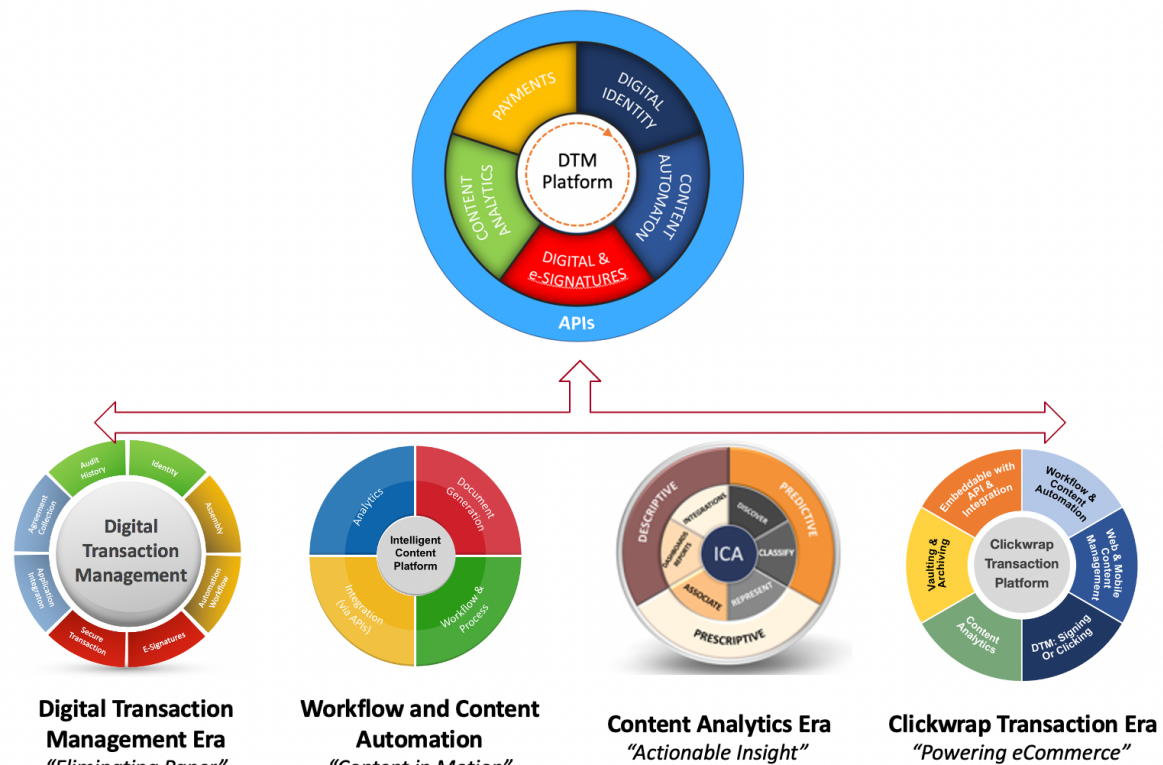
Figure 5: DTM platforms are emerging that leverage automation and AI-based analytics.

The need to look at which document processes should be all-digital is a critical step. Making it easy for end users is also critical. That is why it is important to separate the technical backbone of how things happen vs. what users need to accomplish.

The Aragon Research Globe™ for Digital Transaction Management, 2022
(As of 3/1/22)
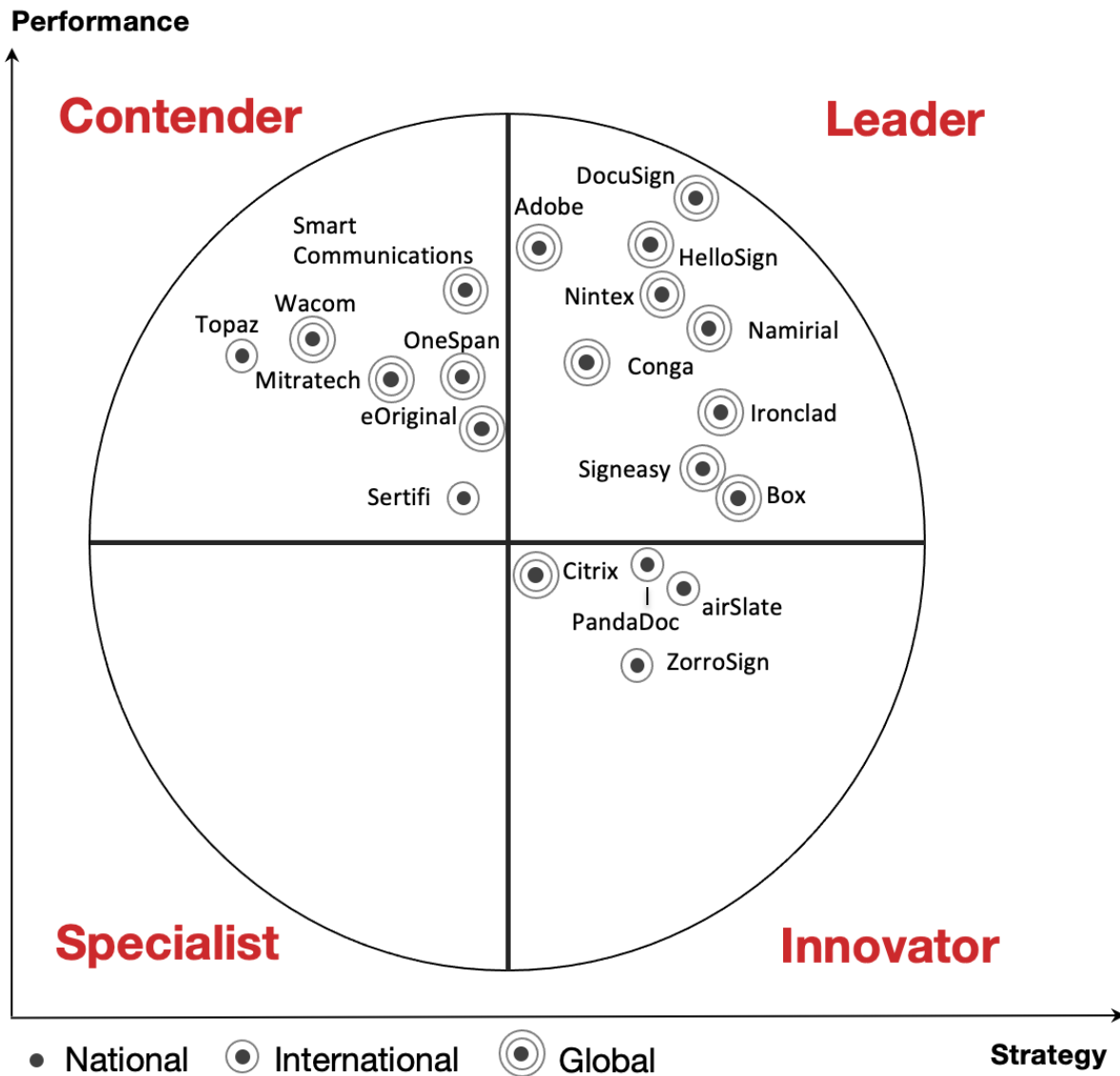
Figure 6: The Aragon Research Globe for Digital Transaction Management, 2022.

Leaders

Adobe

Adobe has continued to invest in content solution offerings for the enterprise. Adobe offers Adobe Document Cloud that includes Acrobat, Adobe Sign, and PDF Services APIs. Its popular PDF platform, Acrobat Pro, offers single user signing. Adobe Sign API enables integration across applications, with pre-built integrations across key systems. Sign Embed enables the integration of Adobe Sign into customer products. Adobe Sign is also integrated with Adobe Experience Manager (AEM) Forms and Document Cloud. In 2021, Adobe expanded its partnership with Microsoft and introduced new ones, including its November 2021 partnership announcement with Veeva Systems.

Document Cloud features a focus on PDF-based documents as one of the overall standards. Adobe Sensei is now more integrated with PDFs. It delivers AI/ML capabilities around document generation, accessibility tagging, and content extraction. Liquid Mode provides a mobile-optimized experience for PDFs by using AI/ML to understand and identify parts of a PDF such as headings, paragraphs, images, lists, and tables and reflow for improved mobile reading.

In 2021, Adobe announced that Adobe Experience Manager Forms was rebuilt and relaunched as a Cloud-native service and fully integrated with Adobe Sign. AEM is fully mobile enabled allowing users to use multiple devices to design and render forms. Additionally, AEM Forms offers an automated forms conversion feature that supports batch conversion of PDF or XDP forms into mobile-friendly adaptive forms at scale. Its strengths in increasing efficiency and digital experiences in paper-intensive industries, including financial services, government, and healthcare continue to allow Adobe to do well.

Adobe continues to expand its PDF and adaptive forms capabilities that can be found in multiple product offerings, including Adobe Experience Manager Forms and Adobe Document Cloud.

Strengths	**Challenges**
● Brand and financial stability	● Balancing native vs. partner capabilities
● SMB offering with Acrobat Pro	
● Advanced DTM capabilities	
● Partner network	
● Broad set of digitization components	

Conga

Conga, under the leadership of CEO Noel Goggin continues to expand its portfolio and its management team. In January 2021, it announced that former DocuSign executive Grant Peterson had joined Conga as chief product officer. In DTM, Conga Sign is its flagship offering that complements its WCA platform. Conga now offers a growing set of offerings including Conga Sign, Document Generation, Configure Price, Quote, and Contract Life Cycle Management. Its focus is now on revenue lifecycle management.

In August 2021, Conga acquired Contract Wrangler to bolster its capabilities in overall content life cycle management, including content AI. Conga and Salesforce have a long history together and Conga offerings are some of the leading solutions in the Salesforce AppExchange. Its Revenue Lifecycle Management Solutions has been gaining traction and has a record number of users. With Contract Wrangler, Conga now has more of its own content AI to analyze contracts, streamline workflows, and then proactively provide actionable insights and recommendations to users.

Conga's quote-to-cash offering when combined with contract lifecycle management capabilities make it a strong choice for revenue operation teams. Its growing DTM and WCA portfolio also make it a candidate in multiple industries—and it should benefit from its partner Salesforce, which has a growing focus on industries such as healthcare, financial services, technology, and media/communications. Conga's increased focus on rationalizing and expanding its product line, as well as its investment in content AI position it well to meet the demands that enterprises face in DTM and content automation.

Strengths	Challenges
• Salesforce integration • Document generation • Contract lifecycle management • Analytics • Ease of use	• Awareness outside of Salesforce Ecosystem

DocuSign

DocuSign has continued to show record growth based on demand for its core DTM capabilities as the race to transform from paper to digital shows no sign of slowing down. DocuSign now offers a portfolio of solutions under the DocuSign Agreement Cloud, including DocuSign eSignature, Notary, Insight, CLM, and Click. DocuSign also touts its growing capabilities in clickwrap, which is expected to see growth as the shift to eCommerce-based online stores continues

As part of its focus on partners and integration, DocuSign now offers DocuSign eSignature for Microsoft Approvals from within Microsoft Teams. DocuSign offers DocuSign Notary, based on its acquisition of Liveoak Technologies in June 2020. Its Agreement Cloud is a suite of products that helps companies connect and automate the way they prepare, sign, act on, and manage agreements. DocuSign Gen has been updated to allow invoice generation and delivery for enterprises that use Salesforce Billing. Additionally, DocuSign Negotiate layers on the ability to redline and track documents as part of sales negotiation.

DocuSign has expanded its focus on AI and offers DocuSign Insight and DocuSign Analyzer, which reads inbound agreements and helps enterprises with negotiations of a contract. DocuSign CLM combines DocuSign Gen with a workflow engine, Word-accessible clause library, and centralized searchable repository. As DocuSign continues to bolster and expand its product line, it also now sees slowed down demand for core eSignature.

<table>
<tr><th>Strengths</th><th>Challenges</th></tr>
<tr><td>

● Expanded agreement cloud platform

● Ease of use

● Brand recognition

● Mobile experience

● Security

● APIs and developer community focus

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● Complex DTM processes

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HelloSign

HelloSign, a Dropbox company, has spent considerable time making its eSignature offering compatible with the Dropbox platform. HelloSign offers its core DTM platform HelloSign, its WCA offering HelloWorks, HelloFax and HelloSign API. In 2021, HelloSign launched a new native mobile apps for both iOS and Android. HelloSign continues to expand globally, particularly in Europe, and is leveraging its new capabilities in 21 different languages as well as offering support for European Data Residency. HelloSign will be able to take advantage of Dropbox's growing AI capabilities, which include a focus on image analytics.

HelloSign's native integration with Dropbox means more Dropbox customers to get exposure to the HelloSign platform, which has led to incremental sales. HelloSign has continued to offer flexible ways to use its platforms and advances in its API offering allow it to win a number of new accounts. Its HelloWorks workflow and content automation platform automates document-based workflows with a no-code user interface that is seamless and easy to use.

HelloSign continues to offer integrations with Microsoft, Salesforce, Google, HubSpot, Oracle, and others. In the race to digital, HelloSign's HelloFax offering continues to assist firms that need fax capabilities but want them in a digital fashion. The Dropbox native integration with HelloSign makes Dropbox a complete content automation platform. As Dropbox continues to integrate HelloSign into its core platform, we see upside revenue potential as more and more Dropbox customers get exposure to the HelloSign DTM platform.

<table>
<tr><td align="center"><u>**Strengths**</u></td><td align="center"><u>**Challenges**</u></td></tr>
<tr><td>

- Native integration in Dropbox and all major FSS providers
- Ease of use with Google Drive
- Workflow and content automation
- Salesforce integration
- Oracle integration
- Global infrastructure with Dropbox
- APIs
- Ease of Integration

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- Overall awareness

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Ironclad

Ironclad, based in San Francisco and led by CEO Jason Boehmig acquired PactSafe in March 2021. It also announced its Series E funding round of $150M, bringing its total funding to $333M. Ironclad's PactSafe unit helped to pioneer the clickwrap transaction platform market. Ironclad's portfolio includes Contract Lifecycle Management, DTM eSignature, Clickwrap Transaction Management and more.

Ironclad also offers Ironclad Sign, its electronic signature offering, which offers signing options and provides templates for sales teams to create key contracts faster. Ironclad offers both ad hoc and dynamic document generation that is tied to user behavior, product selection, and other form data that can be rendered through its content engine in real-time. Ironclad also enables version control and a streamlined approach to updating agreements. In many cases, teams managing documents can simplify or remove manual steps to generating and executing documents by configuring standalone, no-code clickwrap transaction use cases.

Ironclad's CTP offering enables enterprises to create, deliver, manage, track, and archive clickwrap transactions. Its platform offers versioning and vaulting of online terms and agreements, presentation and tracking of online agreements, and DTM options to sign or click. PactSafe extends contract delivery capabilities, enabling enterprises to deliver important documents via text messages and other channels.

As clickwrap transactions become a larger part of online eCommerce-based transactions, Ironclad is well-positioned for this segment of the DTM market. A unique offering of Ironclad's CTP is the ability to automatically capture screenshots of all clickwrap transactions to improve the audit trail.

Strengths	**Challenges**
● DTM platform	● Awareness in North America
● Digital Onboarding	
● Deployment flexibility: SaaS (private/public) and on-premise	
● Complete, fully integrated eSignature portfolio	
● Security and compliance (e. g., eIDAS)	
● Support for signing pads	
● Handwritten biometric authentication	

Namirial

Namirial, under the leadership of CEO Max Pellegrini, continues to focus on its DTM-based Trust Services, with a focus on growth and market expansion. Namirial has started to expand via acquisition and made two recent deals that help with technology and with market coverage. In November 2020, Namirial added content AI capabilities with the acquisition of Netheos. Netheos will add native digital identity capabilities that use AI to speed up the identity of customers for digital onboarding and KYC applications. Additionally, on February 1, Namirial announced that it was acquiring Evicertia, a provider of trust services and DTM capabilities that services Spain and Southern Europe, as well as Latin America.

Namirial's product and service offerings now include its DTM-based Trust Services, its core eSignAnyWhere eSignature capabilities, workflow and content automation, and Digital Onboarding/KYC and Content Management. For eSignAnyWhere, Namirial offers some of the most robust signing options, including electronic, digital, and biometric.

With the addition of Netheos, Namirial now has an AI platform that will speed up digital identity and onboarding. This represents a strengthening of its eID AnyWhere offering, an omni-channel digital onboarding platform enabling KYC processes at different level of assurance via live video chat, video selfie, electronic identity documents, and digital identities. Onboarding has been a tedious process and now with Netheos, Namirial will be able to compete for large digital onboarding deals.

Strengths	**Challenges**
● DTM platform	● Awareness in North America
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● Deployment flexibility: SaaS (private/public) and on-premise	
● Complete, fully integrated eSignature portfolio	
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● Support for signing pads	
● Handwritten biometric authentication	

Nintex

Nintex is a leading digital business platform (DBP) and innovator in workflow and content automation (WCA) and digital transaction management (DTM) that continues to expand the breadth of its Nintex Process Platform. With the company's June 2021 acquisition of DTM market leader AssureSign, Nintex has since integrated native eSignature capabilities into its next-generation Nintex Workflow Cloud and top-rated Nintex Drawloop DocGen app, available on the Salesforce AppExchange, that is leveraged by organizations to quickly and easily automate the assembly and digital distribution of documents.

Nintex continues its mission to expand its addressable market. On February 15, 2022, the company announced that it was acquiring Kryon, an Israeli-based process discovery innovator and RPA leader that has deep understanding of AI and computer vision that will further propel Nintex into the intelligent process automation market. Kryon is Nintex's first acquisition under its new majority investor TPG, and the company's third acquisition in 16 months.

Nintex is positioning itself to become an organization's de facto process system of record with easy-to-use and powerful tools for process discovery, mapping, end-to-end automation, and optimization. Nintex also offers real-time process analytics that help enterprises understand what is happening in their automated workflow and content processes so they can continuously optimize them. This also enables a complete end-to-end routing of data and content, with minimal human intervention.

Nintex remains one of the largest privately held process automation software vendors in the world with annual sales exceeding $275 million and one of the larger independent digital business providers. Nintex offers a growing portfolio of DTM and content and process automation capabilities that spans multiple clouds.

Strengths	Challenges
• Ease of use	• Rapidly integrating newly acquired technology
• Advanced workflow and content automation	
• No-to low-code approach	
• Visual business process management	
• Robotic process automation with fast time to value	
• Automated document generation	
• Automated workflow generation	
• Microsoft and Salesforce integrations	

| **Signeasy** | |

Signeasy has expanded its market footprint globally, serving more than 40,000 businesses with a focus on SMB and mid-market segments. Signeasy, a multi-device platform, has grown due to its easy, intuitive eSigning experience, and popularity in the App store and Google Play store. For developers, Signeasy provides a rich and flexible API platform to integrate eSignatures into their core software and business workflows such as customer, agent and employee onboarding.

2021 saw Signeasy also invest in its Google, Microsoft, and Salesforce partnerships, leading to market expansion in North America, Europe, and Asia Pacific. Its most recent integration 'Signeasy for Salesforce' is a modern, purpose-built eSignature solution for sales teams. This year, Signeasy released additional features for Microsoft Teams enabling users to send documents out for signature internally or externally without leaving the Teams interface, and expanded their Google footprint with Google Sheets integration to offer users a more unified Google Workspace experience.

Apart from Apple App Store and Google Play Store, Signeasy is available on the Google Workspace Marketplace, Microsoft App Source, and now the Salesforce AppExchange. Signeasy is available in 24 languages, supports all major document formats, and offers a centralized dashboard for user management as part of their team and business plan. Signeasy also leverages Box, Google Drive, Dropbox, and Microsoft OneDrive for document storage and archiving.

This year, they have revamped their admin experience with the launch of usage reports. In line with their strategy to move upmarket, Signeasy has invested significantly in security and compliance to become SOC2 Type II and HIPAA compliant. With global coverage for sales and support and transparent and flexible pricing, Signeasy is one of the providers to watch.

Strengths	**Challenges**
• Ease of use	• No support for qualified eSignatures
• Mobile apps (iOS and Android)	
• Security & Compliance	
• Modern, easy-to-integrate APIs	
• Global language support	
• Salesforce Integration	
• Microsoft Teams and Office 365 Integration	
• Google Workspace Integration	

Box

Box, based in Redwood City, CA and led by CEO Aaron Levie, made a major move into the digital transaction management market in 2021 with the launch of Box Sign. Box Sign, launched in July was the result of its acquisition of SignRequest earlier in 2021. This is a major market expansion for Box which has been a market leader in cloud and enterprise content management. In addition to the core content management capabilities, the Box product family now includes Security (Box Shield), Box Governance, Workflow (Box Relay), Box Platform, Box Zones, Box KeySafe, and Content Migration (Box Shuttle).

The disruptive move that Box made with Box Sign was to add it to its Box Content Cloud offerings at no extra charge. Now tens of thousands of Box customers are able to use Box Sign's native e-Signature capabilities since it's included in their Box subscription. Additionally, Box already has Box Relay, its native workflow automation solution. The Box Content Cloud allows users to create, secure, share, edit, publish, approve, sign, classify, and retain files within the entire content lifecycle. This helps Box offer a more complete DTM offering than just e-Signing.

For DTM, Box was already leading in security. With Box Shield, enterprises that want secure e-Signing can leverage Box Shield and its policy creation capabilities and apply them to digital transaction management use cases. Threat detection is something that other DTM providers may want to emulate. Box is also focusing on content intelligence with Box Skills, which leverages machine learning from partners such as IBM, Google, and Microsoft to enrich content.

We expect that enterprises with custom and/or high-volume e-Signing needs may want to explore the API capabilities offered by Box Platform, which offers configurations for high-volume API-usage. Box made a well-timed move into the DTM market and with its full content platform and workflow, it is a complete DTM provider. Given that all Box business customers can now take advantage of Box Sign to execute unlimited e-Signatures at no additional cost, we expect to see market disruption. This makes Box one to watch in the DTM market.

Strengths	Challenges
• Brand recognition • DTM support • Native content security • Secure collaboration across the extended enterprise • 1,500+ integrations with major LOB and productivity apps • Cloud focus • Industry focus • APIs • Install base	• On-premise options

Contenders

eOriginal

eOriginal is now a wholly-owned subsidiary of Wolters Kluwer, which focuses on health, tax and accounting, finance, compliance, and legal markets. Its eOriginal unit offers a DTM platform called ClosingCenter, which is a digital loan platform that powers a number of financial enterprises. ClosingCenter offers a simple and intuitive closing experience for mortgage lenders, borrowers, and settlement agents. Besides ClosingCenter, eOriginal continues to offer its eVault asset management and its eOriginal SmartSign signature capabilities.

eOriginal's trusted approach ensures that all ESIGN, UETA, and UCC legal requirements and recommendations are fully met to establish a burden of proof for an authoritative copy that is legally enforceable (i.e., Digital Original™ documents).

ClosingCenter features its Remote Online Notary hub that allows contactless digital mortgage closings. eOriginal has continued to expand its leadership position in digital mortgage and enhanced liquidity in the industry with customers across the ecosystem: Quicken Loans, Wells Fargo, Fannie Mae, Fairway Independent, and Ginnie Mae. In what continues to be a hybrid work environment, eOriginal is one provider that is well-positioned to enable digital mortgage transactions in a completely remote fashion.

Strengths	Challenges
● DTM platform	● Awareness outside of financial services
● Asset management	
● Deep experience with digital assets on the secondary market	
● Digital mortgage solution	
● Integration with other eSignature providers	

Mitratech

Mitratech has continued to expand its product portfolio from its original legal operations heritage. Its new, expanded focus now includes workflow automation, risk and compliance, and HR and immigration. In 2021 it acquired Quovant to focus on spend management and legal bill review. Besides its native eSignature support, Mitratech TAP Workflow Automation provides solutions spanning multiple industries, including specialty apps designed for legal, compliance, human resources, procurement, and finance. Mitratech has also been acquiring firms in related markets. In July 2020, it acquired Tracker Corp, which manages all aspects of immigration-focused I-9 forms, making it a vertical WCA offering. In addition to Tracker, Mitratech also acquired five other firms in the last year. Mitratech TAP is also integrated with Adobe Sign, DocuSign, Namirial and others.

Mitratech has continued to expand the TAP platform with new features and modules, including advanced document generation capabilities, collaboration capabilities, and dynamic, multi-language support for intake forms. In 2020, Mitratech made seven of its TAP Automation templates available at no charge to assist enterprises in dealing with COVID. TAP has a robust set of APIs for integration with third-party apps, including Microsoft, Salesforce, and Mitratech's growing portfolio of solutions. For law firms and for corporate legal teams, Mitratech has embraced content automation as one of its core planks.

Strengths	Challenges
● Workflow and content automation	● Awareness outside of legal departments
● Drag-and-drop design tools	
● APIs and integrations	
● Ease of use	
● Custom interfaces	
● Real-time collaboration	
● Security	

OneSpan

OneSpan announced a new CEO, Matthew Moynahan, in November 2021. OneSpan continues to focus on eSignatures, identity verification, authentication, and mobile security. OneSpan has continued to offer a highly secure DTM offering due to its focus on regulated and compliance-driven markets such as banking, financial services, and insurance.

In February 2022, OneSpan and Smart Communications announced a partnership where Smart Communications will leverage OneSpan DTM capabilities along with its WCA and CCM offerings.

OneSpan's Virtual Room solution, which combines digital authentication and identity verification, videoconferencing, and co-browsing with OneSpan Sign's e-signature capabilities, focuses on digitally replicating the face-to-face agreement process for complex agreements that benefit from human mediation.

OneSpan continues to offer its Qualified Electronic Signature capabilities through its TSP Program, which enables all three forms of eIDAS signature types. OneSpan continues to be one of the few DTM providers with a U.S. Federal Government FedRAMP Cloud Certification. OneSpan has a robust partner ecosystem that includes partnerships with Pegasystems, Laserfiche, Guidewire, Salesforce, nCino, and 90 others. As cyberwar continues to grow, OneSpan's focus on security and identity will help to differentiate it in the overall DTM Market.

Strengths	**Challenges**
● Financial services & government	● Balancing focus on security vs DTM
● Asset management	
● FedRAMP Certification	
● Salesforce & CPQ integration	
● Advanced authentication capabilities (e.g., mobile biometrics)	

Sertifi

Sertifi continues its focus on the hospitality industry. Sertifi offers three core product offerings: Sertifi Agreement Platform, Sertifi Authorization Platform, and the Sertifi API. Sertifi also has a billing offering that leverages Sertifi Payments and eSignature capabilities and integrates directly with Salesforce CPQ and Salesforce Billing. The Sertifi API offering for deeper integration with applications, and customer experiences, such as including embedded forms on customer websites.

Sertifi continues to see success in the hospitality industry. In September 2021, Sertifi and Infor announced a general partnership that focuses on hospitality, a focus area for both companies. Sertifi eAuthorize integrates into Oracle Hospitality OPERA for automatic property management system (PMS) payment authorization posting, and Sertifi Closing Pro+ integrates into Amadeus Hospitality's Advanced Module for sales and catering teams to collect secure event deposits faster.

<table>
<tr><td align="center">**Strengths**</td><td align="center">**Challenges**</td></tr>
<tr><td>

• Hospitality market focus
• Built-in payment capture technology
• Electronic signature experience
• Zuora and Salesforce integrations
• Salesforce integration

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• Awareness outside of U.S.

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Smart Communications

Smart Communications, based in the United Kingdom and led by CEO James Brown, has continued to focus on content automation and CCM while building out its data collection and digital form solutions with SmartIQ™. Smart Communications now has three main product offerings: SmartCOMM™, SmartIQ™ (formerly Intelledox), and SmartDX™. SmartCOMM is the traditional CCM platform, which uses modern templates to enable communications to customers via multiple channels. In January 2022, Smart Communications announced that it was partering with OneSpan, and that OneSpan Sign would be integrated with the Smart Communications Platform. Previously, Smart had partnered with DocuSign for years.

In 2021, Smart Communications announced that it would deliver a full cloud-based solution to Europe, powered by Amazon AWS. Smart Communications has its own data centers that it leverages for customer deployments.

SmartIQ features what its calls adaptive interviews, which collect information—connecting to third-party systems of record—and then use new and existing data to automatically generate personalized digital content and documents on-demand via its intuitive user experience. SmartIQ's low-code approach allowed it to work with financial institutions to offer a complete Paycheck Protection Program (PPP) in record time. SmartDX provides trading documentation generation and collaboration for leading investment banks.

The Smart Communications Conversation Cloud™ platform provides enterprises with a robust set of capabilities designed to enable a full customer conversation including onboarding, workflow, collaboration, and content automation.

Strengths	**Challenges**
● Journey-based document creation and workflow	● Partners for eSignature
● Content automation	
● Data collection	
● Ease of use	
● Intelligent user experiences	
● Journey analytics	
● Partnerships	
● Payments	

Topaz Systems

Privately held Topaz Systems continues to offer dedicated Signature Tablets and LCD Signature Tablets for eSigning. Use cases include pen-based signing and fingerprint-based biometric signing. It continues to leverage its European subsidiary Euronovate for eSignatures as well as a focus in the European market. Euronovate offers a full set of electronic and digital signature capabilities.

The Topaz GemView 7 tablet that has a 7-inch diagonal view Topaz has seen success in industries, including healthcare, insurance, government, and retail. Topaz offers a wide array of integrations via its SDKs. These include support for Adobe Acrobat, FoxPro, Microsoft Office, and leading web browsers.

Topaz has a strong partner ecosystem that includes over fifteen different go-to-market partners in the Americas—many of which have a significant focus on healthcare and automotive. Euronovate is helping Topaz in the European market.

<table>
<tr><td align="center"><u>**Strengths**</u></td><td align="center"><u>**Challenges**</u></td></tr>
<tr><td>

- Brand
- Focus on tablets
- Install base
- Reseller network

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- Primarily known for its tablet-based Signature Pads

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Wacom

Wacom is a global provider of digital pen and ink solutions including both hardware and software. Its Wacom for Business solutions group offers both Tablets, Pens and DTM software for eSigning and signature verification. Wacom's hardware and inking technologies are designed to leverage Wacom Tablets as well as supported third party devices. Wacom's Ink SDKs provides a level of understanding on signatures that few can match due to its ability to understand embedded meta-data, biometrics, and semantic/contextual ink data.

The Wacom for Business product suite includes the STU-540 Color Signature Pad and DTH-1152 Pen & Touch Display. Wacom software offerings include sign pro PDF (app and API), signature verification, form processing, and digital ink APIs, which now can be digitally verified. The Wacom for Business DTM products are fully integrated with Wacom's hardware portfolio of signature pads, interactive displays, smart pads, and digital pens. Wacom has also built robust OEM relationships with major PC, tablet, and smartphone manufacturers to embed Wacom technology in their devices.

Wacom focuses on four key industries, including banking, healthcare, retail, and insurance—where signature fidelity and security are key. Wacom provides its proprietary sign pro PDF API and a full suite of software development kits (SDKs) to allow enterprises and partners to develop unique solutions that integrate with legacy applications.

Strengths	**Challenges**
● Brand	● Market awareness in DTM
● Tablets and smart pads	
● Signature verification capabilities	
● Industry solutions	
● Reseller network	

Innovators

Citrix

Citrix offers a standalone basic DTM solution, RightSignature, and a more comprehensive solution, Citrix Content Collaboration, bundling RightSignature with its flagship Citrix ShareFile solution for cloud content management, and Citrix Podio for workflow automation.

Citrix Content Collaboration is an integrated, secure document collaboration and workflow solution that boosts worker productivity, improves the client experience, and automates document centric workflows. As part of its digital workspace strategy, Citrix has made significant investments to integrate with business applications including Microsoft and Google productivity solutions.

RightSignature continues to offer a payments option, which, by integrating with Stripe, allows for SMBs to collect payments right at the time of the transaction. RightSignature provides a fully featured eSignature offering, including multi-party signatures, templates, and bulk-send capabilities.

Citrix is in the process of being acquired by two private equity firms—Vista Equity and Evergreen Coast Capital—for $16.5B and after that is completed will become a private company.

Strengths	Challenges
● Brand	● Awareness of DTM offering
● Integrated cloud content management	
● Payments	
● Multi-party signatures	
● Templates	
● Price efficient	
● Digital workplace focus	

PandaDoc

PandaDoc, based in San Francisco, announced a Series C funding round but did not disclose the amount. This comes on top of its $30M round it last got in August 2020. PandaDoc offers an all-in-one document workflow automation platform with eSignature capabilities. PandaDoc is known for its ease of use for document creation and its forever-free eSignature product. PandaDoc use cases vary from sales-focused quote, proposals, and contracts to internal company use cases such has HR and compliance. Payment can also be accepted through PandaDoc upon eSignature completion to finalize transactions. New capabilities launched in 2021 include PandaDoc Forms to simplify data collection, Contract Negotiations to view, comment on, and accept changes to contracts, and integrations with Slack, Zoom, Microsoft Teams, Google Workspace, and Monday.com.

PandaDoc continues to make DTM easy to use, partially due to its editor that simplifies document creation and features built-in collaboration. Advanced analytics allow users to know what documents are being accessed and viewed and enables a better understanding of their impact.

One of the key aspects PandaDoc focuses on is the speed of the document creation process. Users can access a template library of over 750 templates to jump start their document creation, create a content library of approved documents, or integrate with their CRM to automate custom fields into documents. PandaDoc integrates with 16 CRMs, including Copper, HubSpot, Pipedrive, Salesforce, and Zoho.

Strengths	Challenges
• Ease of use	• Market awareness
• Document generation	
• eSignature	
• Integrations	
• Payments	
• Analytics	

airSlate

airSlate, based in Boston, continues to offer its DTM platform with a growing focus on partnerships in a number of vertical markets. airSlate offers a growing set of capabilities that enhance its core eSignature capabilities. These include RPA capabilities, document generation, surveys, webforms, and contract management. airSlate is an all-in-one, no-code platform that allows anyone to create, automate, and deploy business processes. The solution combines web forms, eSignature workflows, pre-built document templates, and 100+ no-code bots to help individuals and teams digitize their own automated interactions.

airSlate continues to offer PDFfiller, an end-to-end document management solution, it transforms static PDFs into interactive documents. Its flexibility and feature set help digitize a multitude of use cases—from sales to operations to accounting and legal.

In 2021, it launched its low code workflow and content automation capability that it calls flow Creator. signNow is also available via the Salesforce AppExchange partner network. airSlate also supports integrations with Box, Dropbox, Egnyte, Google Drive, Microsoft OneDrive, and NetSuite. In 2021, airSlate partnered with RentTango to improve its focus on real estate transactions. This along with its integrated payments will help it compete in B2C markets where payments are needed.

<u>Strengths</u>	<u>Challenges</u>
● Pricing	● Market awareness outside of the U.S.
● Mobile app	
● In-app purchase option	
● Workflow and content automation	
● API	
● Allows for company branding	

ZorroSign

ZorroSign, headquartered in Phoenix, continues to focus on it DTM offerings with a growing focus on blockchain. Over the last two years, ZorroSign has added Provenance Blockchain to its architecture, effectively becoming a multi-chain blockchain platform beyond its Hyperledger Fabric base, and also updated its offerings and its product naming. Its product portfolio now includes Z-Sign, Z-Flow, Z-Fill, Z-Vault, Z-Forensics, and Z-Verify. It offers its digital signatures technology as its core DTM offering, which is now focused on the mid-market. It also offers patented Z-Forensics token technology, a unique, built-in advanced security feature that detects document fraud and signature forgery, and eliminates the need to purchase yearly digital security certificates.

Z-Fill now includes intelligent forms fill-in using artificial intelligence and machine learning. Z-Flow allows enterprises to build both standard and customized workflows that are tied to eSigning. ZorroSign is also focused on a number of industries, including Financial Services, Legal Services, and Technology. The DTM platform capabilities, combined with its advanced security, will make ZorroSign attractive in markets such as government, real estate, insurance, IT, and legal.

| **Strengths**	**Challenges**
• Real electronic signature	• Market awareness
• Token-based security	
• Mobile biometrics	
• APIs and integrations	
• Ease of use	

Aragon Advisory

- Paper processes slow down the enterprise. Enterprises should look to deploy basic DTM capabilities to start signing agreements electronically.
- Enterprises should ask their provider what their roadmap is for content AI.
- Security continues to be one of the looming issues for transactions. Understand provider roadmaps as it pertains to security.
- It is important to evaluate ease of use for senders and for signers, particularly the mobile signing experience.

Bottom Line

The hybrid work environment we are still in means that paper needs to be eliminated for any document-based transaction. Enterprises should look to expand basic DTM signing opportunities, and also look at the same time to integrate DTM capabilities with existing applications. Employee and customer onboarding are two key areas of opportunity that go beyond basic signing. Enterprises need to look at all their document processes with a view towards simplifying signing and then later towards automating the document process.

Aragon Research Globe Overview

The Aragon Research Globe graphically represents our analysis of a specific market and its component vendors. We do a rigorous analysis of each vendor, using three dimensions that enable comparative evaluation of the participants in a given market.

The Aragon Research Globe looks beyond size and market share, which often dominate this type of analysis, and instead uses those as comparative factors in evaluating providers' product-oriented capabilities. Positioning in the Globe will reflect how complete a provider's future strategy is, relative to their performance in fulfilling that strategy in the market.

A further differentiating factor is the global market reach of each vendor. This allows all vendors with similar strategy and performance to be compared regardless of their size and market share. It will improve recognition of providers with a comprehensive strategy and strong performance but limited or targeted global penetration, which will be compared more directly to others with similar perspectives.

Dimensions of Analysis

The following parameters are tracked in this analysis:

Strategy reflects the degree to which a vendor has the market understanding and strategic intent that are at the forefront of market direction. That includes providing the capabilities that customers want in the current offering and recognizing where the market is headed. The strategy evaluation includes:

- Product
- Product strategy
- Market understanding and how well product roadmaps reflect that understanding
- Marketing
- Management team, including time in the job and understanding of the market

Performance represents a vendor's effectiveness in executing its defined strategy. This includes selling and supporting the defined product offering or service. The performance evaluation includes:

- **Awareness**: Market awareness of the firm and its product.
- **Customer experience**: Feedback on the product, installs, upgrades and overall satisfaction.
- **Viability**: Financial viability of the provider as measured by financial statements.
- **Pricing and Packaging**: Is the offering priced and packaged competitively?
- **Product**: The mix of features tied to the frequency and quality of releases and updates.
- **R&D**: Investment in research and development as evidenced by overall architecture.

Reach is a measure of the global capability that a vendor can deliver. Reach can have one of three values: *national*, *international* or *global*. Being able to offer products and services in one of the following three regions is the third dimension of the Globe analysis:

● **Americas** (North America and Latin America)

● **EMEA** (Europe, Middle East, and Africa)

● **APAC** (Asia Pacific: including but not limited to Australia, China, India, Japan, Korea, Russia, Singapore, etc.)

The market reach evaluation includes:

● Sales and support offices worldwide

● Time zone and location of support centers

● Support for languages

● References in respective hemispheres

● Data center locations

The Four Sectors of the Globe

The Globe is segmented into four sectors, representing high and low in both the strategy and performance dimensions. When the analysis is complete, each vendor will be in one of four groups: *leaders*, *contenders*, *innovators,* or *specialists*. We define these as follows:

● **Leaders** have comprehensive strategies that align with industry direction and market demand, and effectively perform against those strategies.

● **Contenders** have strong performance, but more limited or less complete strategies. Their performance positions them well to challenge for leadership by expanding their strategic focus.

● **Innovators** have strong strategic understanding and objectives but have yet to perform effectively across all elements of that strategy.

● **Specialists** fulfill their strategy well but have a narrower or more targeted emphasis with regard to overall industry and user expectations. Specialists may excel in a certain market or vertical application.

Inclusion Criteria

- A minimum of U.S. $4 million in primary revenue for digital transaction management or a minimum of $10 million in revenue in a related market (content management, workflow, or portal/UX software).
- Shipping product. Product must be announced and available.
- Customer References. Vendor must produce a minimum of three customer references in each hemisphere that the vendor participates in.

Inclusions:

The following vendors were added to this report:

- *Box*
- *Ironclad* *(formerly PactSafe)*

Exclusions:

The following vendors were not included in the report but are notable:

- *InfoCert*
- *SigningHub*
- *SIGNiX*
- *SkySignature*
- *Indorse Services*