

CELENT

TRANSFORMING THE SIGNATURE

E-SIGNATURE VENDORS IN BANKING 2017

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May 2017

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EXECUTIVE SUMMARY

- 1 *Where are e-signatures having the greatest impact on banking?*
- 2 *How has the technology for e-signatures evolved?*
- 3 *How can e-signature technology create a better customer experience?*

The drive to digital casts a wide net over financial services. Whether it's a drive toward cashless or a push to remove paper, manual processes are quickly giving way to paperless alternatives. Concerned about their margins, banks are looking to cut costs. Manual processes are expensive, and to the extent that a financial institution can get rid of them, the gains will be substantial. In this environment, efficiency-enhancing solutions like e-signatures are crucial.

Traditionally, the question of e-signatures in banking revolved around their viability as a secure offering within the customer lifecycle. Over the past 5 to 10 years, these concerns have almost entirely disappeared as the market has reached a broad consensus related to their value.

A convergence of factors has driven growth.

- Global regulations have helped ensure global standards for their use.
- Banks are aggressively looking for ways to improve operational efficiency.
- Consumers are used to electronic signatures in many other industries and activities.
- The benefits of e-signatures have outweighed concerns about the legal risks of using them.

The sheer number of implementations within banking has assuaged many of the previous concerns, improving comfort levels across the industry. The result is more widespread use of e-signature in bank processes and applications, in turn creating even more opportunity for vendors in the space.

Offerings from e-signature vendors are beginning to encompass complete digital transformation solutions, building on the e-signature foundation. The evolution of these products, supported by a number of acquisitions within the space, has focused on the role of e-signatures within a digital framework, emphasizing the role they play in designing digital business processes. While there are still numerous point solutions in the market, most modern solutions have adopted a platform approach.

This report seeks to illuminate many of these e-signatures solutions, giving a detailed look into their differences and market propositions. The report begins with an overview of the e-signature market, examines the technology, and offers recommendations for banks looking to invest in an e-signature solution. The appendix is a deep dive into today's major e-signature products.

OVERVIEW OF E-SIGNATURES

Key Research Question

1

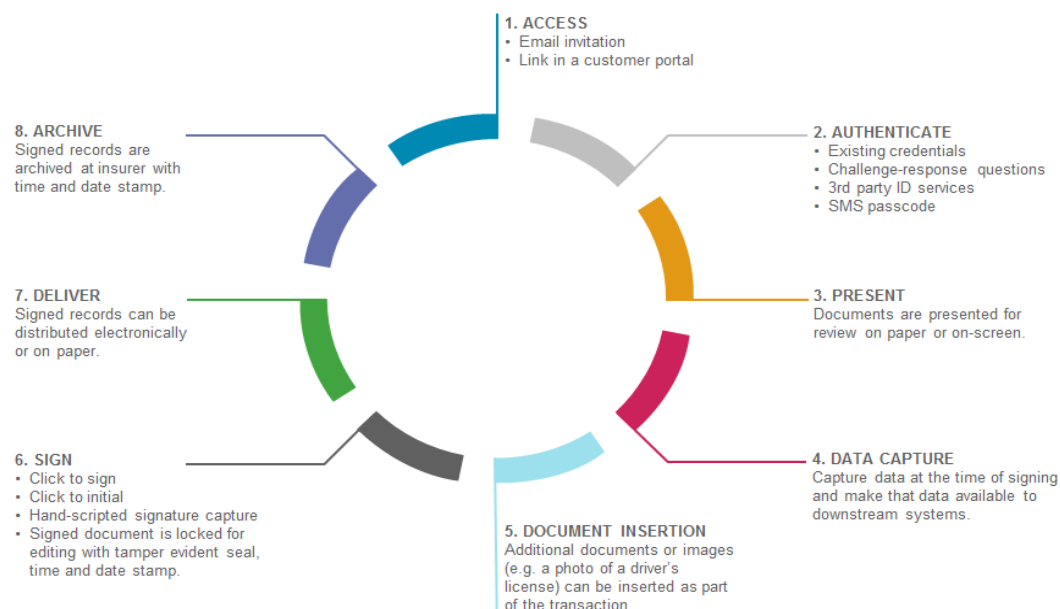
Where are e-signatures having the greatest impact on banking?

E-signatures are vastly improving the digital capabilities of banks as they explore broad digitization initiatives that include a wider range of business processes.

The signing ceremony is steeped in tradition. Signing a document is one of the oldest and most established forms of capturing identity as well as intent; both consumers and businesses consider it a trusted form of validation. Only recently has it been possible to reliably replace wet signatures with electronic or digital variations.

An electronic signature, or e-signature, is used to allow a signatory to sign a document in electronic form and is logically associated with other digital data on the form. The e-signature provides the same legal standing as a handwritten signature as long as it adheres to the requirements of the regulation under which it was created. Electronic documents and signatures are legally binding for nearly every business or personal transaction around the world. The basic e-signature process is shown in Figure 1.

Figure 1: E-Signature Process



Source: Celent

Questions about the viability of e-signature applications for banking have been answered over the last 10 or 15 years, aided by favorable regulation which established clear support for its implementation. Banks are utilizing e-signatures across many functions and processes in an effort to lower costs, shorten cycle times, and improve the services

they provide to both business partners and consumers. The rapid momentum in e-signature adoption has also been driven by the evolution of consumer technology. Smartphones, tablets, and touch screen computers help make e-signing more accessible. Figure 2 shows a number of different signing scenarios, reflecting how the increase in touch points has expanded the market.

Figure 2: Signing Scenarios

ASSISTED/CONNECTED		NON-ASSISTED	
1	Face to face in branch	5	Kiosk/ATM
2	Face to face remote	6	Tablet/smartphone
3	Virtual face to face	7	Notebook/PC
4	Voice to voice		

Source: Celent

E-signature technology has matured, driven by the experiences of many adopters, the increased emphasis on cycle time and cost, the rapid evolution of consumer technology, and the development of systems standards that make bank systems flexible and efficient. Shown in Figure 3, the result is a growing number of use cases in banking.

Figure 3: Potential Use Cases: E-Signatures in Banking



Source: Celent

- Celent finds that institutions share many of the same drivers for implementation, which touch on four different needs:
- **Reduce paper costs:** Banks are looking to reduce costs associated with document handling, couriers, servicing, mailing, etc.
 - **Improve error rates:** Exception management and the reduction in time to remove and fix errors in documents can have a number of follow-along benefits to a bank's back office.

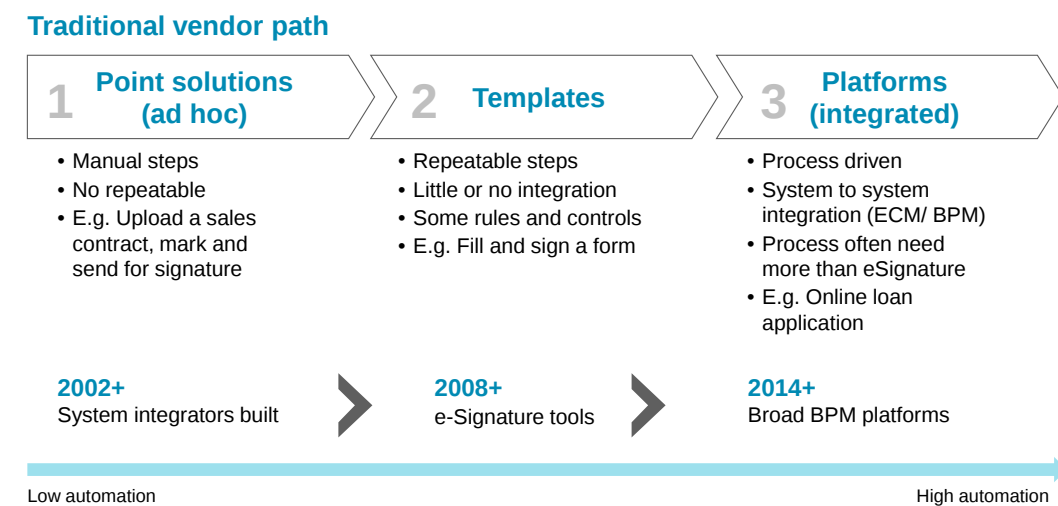
- **Mitigate risk:** Improperly managed documents or lost documents can open up an institution to legal vulnerabilities like regulatory penalties or lawsuits.
- **Enhance customer experience:** Customers expect an ease of use that e-signatures can provide.

As the business case becomes more pressing and the use cases within the customer experience expand, vendors are beginning to adapt their offerings.

VENDOR PRODUCTS

Large vendors have been eager to acquire e-signature solutions that build out their larger digital transformation software suites. In the past, e-signature vendors largely spoke only to the front office or line of business heads. Solutions were ad hoc with specific products or LoBs. Increasingly, vendors are seeing their influence reach C-level executives. Broad digital transformation initiatives are illuminating the importance of e-signatures.

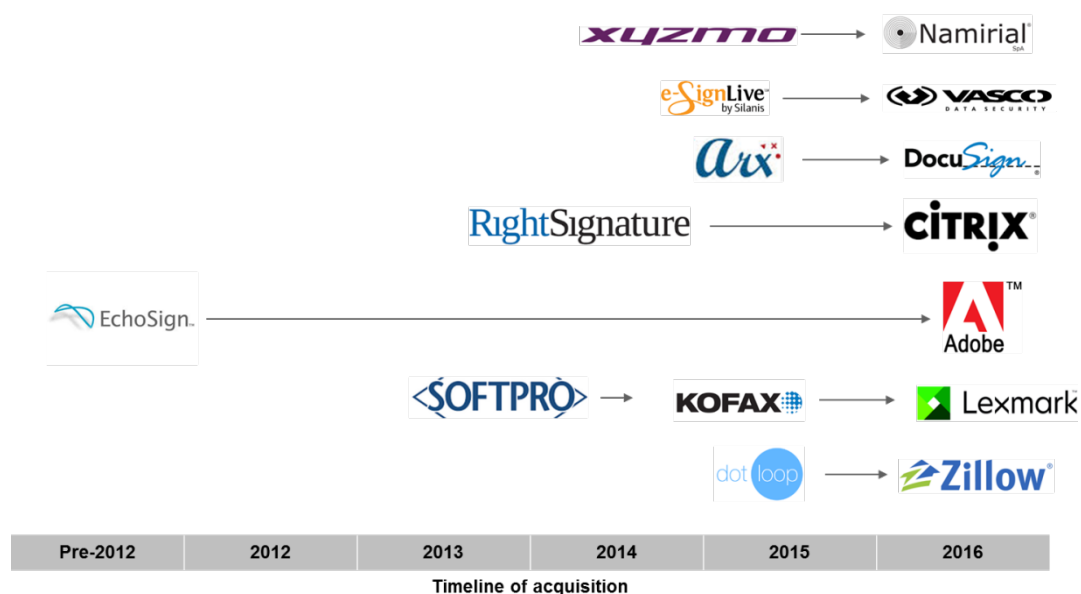
Figure 4: Vendor Product Evolution



Source: Celent, AssureSign

Figure 5 shows the consolidation happening in the market leading to these suite offerings. When Celent last published this report, vendors included Adobe, AlphaTrust, AssureSign, CIC, DocuSign, RPost, SIGNiX, Silanis, SOFTPRO, RightSignature, xzymo, and Wolters Kluwer. Five of the twelve vendors in that report were acquired by larger firms.

Figure 5: E-Signature Vvendor Consolidation



Source: Celent (as of April 2017)

With the acquisitions come new company types. Vasco is a security company; Adobe and Lexmark are document companies; and Namirial is a certification company. The purchases began before our last report with Adobe buying EchoSign, but continued with DocuSign buying ARX, Citrix buying RightSignature, Vasco buying eSignLive by Silanis, Kofax buying SoftPro then Lexmark buying Kofax, and Namirial buying xyxmo. The acquisitions also mean that the e-signature solutions now have a much more global reach in many cases. As of publication, Lexmark Kofax had announced plans to split from Lexmark, creating a software and a hardware company, respectively.

The new e-signature offering is part of an enterprise play that leverages modern technology like APIs and higher levels of control over the broader business process. These platforms are highly integrated with ancillary systems to enhance various digital processes. For example, online loan applications will require not only a digital signature, but multiple forms of identification. New suites of e-signature products sit within this framework and operate as part of a larger set of solutions.

PRODUCT SELECTION

The following capabilities are included in a complete e-signature solution:

- **Authentication and identification:** Users prove that they are the right person. This can be accomplished by providing, validating, or accessing shared info.
- **Multichannel/device support:** Allow both sender and recipient users to sign documents on a variety of devices and operating systems
- **Documents and data:** Encrypt and secure communications and shared documents between the users of the solution. Often embedded with the PDF, but must be linked to provide the connection.
- **Information, notification, and consent:** Track document status and notify users when actions are required (sign, approve, etc.). Law says e-signers need to be informed and must be able to opt out.
- **Data trail for auditing:** Evidence of the transaction. This tracks the actions of the signer and the document for reference during audit.

- **Role-based features:** Enable users to define user roles and permission rights both internally as well as for external users (contractors, partners, and customers).
- **Document management:** Offer built-in document creation and storage capabilities or integrate with third party software solutions that provide document creation or storage features.

Table 1 highlights the key components often associated with e-signature solutions available from these vendors. Depending on what a bank needs, an e-signature solution may include components that automate the signing process outlined in Figure 1. Additional components may include transaction monitoring so banks will know the status of outstanding documents and reporting and analytics.

Table 1: High-Level Component Availability

	Adobe EchoSign	AlphaTrust Corp.	SignNow by Barracuda	DocuSign	eOriginal	eSignLive by Vasco	Euronovate	Kofax by Lexmark	Namirial GMBH	SIGNIX	Wolters Kluwer
Electronic creation of forms for signing											
Electronic delivery of forms for signing											
Electronic signature											
Forms/document retention/archiving											
Identity authentication											
Transaction monitoring											
Reporting and analytics											

Can be licensed/implemented as a stand-alone component
 Available ONLY bundled with a E-Signature solution (no additional cost)
 Available ONLY bundled with a E-Signature Solution (with additional cost)
 Available through third party provider
 Available bundled with a E-Signature solution or through 3rd party provider

Source: Celent

For all vendors, the key components of the electronic delivery of the form to be signed and the e-signature function are available as part of their e-signature solutions. Integration with software partners is common for forms and document retention and identity authentication.

Not only are the solutions expanding in functionality, but the number of prominent players in the e-signature market is expanding. Banks should consider key questions when choosing an e-signature partner:

- What type of solution is the best fit for our company's business model, risk tolerance, and corporate culture?
- What components do we already have in place, and how can they be leveraged?
- Do we want a solution that works as an integrated component of third party software, such as a CRM system or eApplication, or do we want it to be a separate system?
- Do we need all the functionality available for an enterprise solution, or do we need a more straightforward solution?
- Does the vendor support the deployment methods our bank seeks: on-site, SaaS, offline versus online, mobile?
- Do we want a vendor with a global reach or one that caters to our specific region?
- Will the vendor be around long after the system has been implemented in case a legal challenge arises?
- Does the vendor have sufficient staff to meet our needs during implementation and after?

TECHNOLOGY SUMMARY

Key Research Question

2

How has the technology for e-signatures evolved?

The technology for e-signatures has progressed to more advanced delivery models. E-signatures have moved toward digital signage, where authentication captures granular contextual data related to the signing ceremony.

Before we get to the vendors, a brief review of the deployment options, access methods, e-signature approaches, and security features they support is in order.

DEPLOYMENT OPTIONS

Deployment options describe the service delivery model of the vendor e-signature systems. Table 2 shows the various options by vendor. Options include:

On-Premise: Deployed behind an organization's firewall, this is the most traditional way of deploying enterprise applications and is still preferred by many institutions. The software is installed on the company's servers and hosted in its own data center.

- Pros: System flexibility and control. The system is configured to the company brand, business process, compliance, and IT architecture. Meets stringent compliance and privacy requirements because the bank has complete control over where and how the data is stored. Enterprise pricing may be available which can allow for better control over costs and potentially a lower cost of ownership if transaction volumes are high.
- Cons: Staffing and technology cost to maintain system.

Hosted: The e-signature solution is deployed on site at the vendor or at a third party location. The vendor takes care of the servers, hardware, and software. The software can be deployed as a dedicated instance of the software or as an on-demand software as a service. The different models provide options for pricing and can be licensed on transactional or subscription basis.

- Pros: Provides upfront time and cost savings because the vendor maintains the hardware and software. Price elasticity may offer cost savings, especially for banks with variable transaction volumes during the year.
- Cons: Must rely on vendor to meet data security, privacy, and compliance requirements.

SaaS/Cloud (public and/or private cloud deployments): The e-signature solution is deployed on a cloud platform like Amazon AWS or Microsoft Azure.

- Pros: Provides upfront time and cost savings because the vendor maintains the environment. Flexibility to add or remove environments quickly as IT needs change.
- Cons: Data is stored off-premise. Reliance on the vendor for data security, privacy, and compliance. May not be compliant with existing regulations.

As the number of SaaS solutions grows and on-premise becomes less the norm, the question of which is better is not as important as the ability of the solution to integrate with the enterprise architecture and processes.

Table 2: Deployment Options by Vendor

VENDOR	ON-PREMISE	HOSTED	SAAS/CLOUD
ADOBE	✓	✓	✓
ALPHATRUST	✓	✓	✓
SIGNNOW BY BARRACUDA	✓	✓	✓
DOCUSIGN	✓	✓	✓
EORIGINAL		✓	
ESIGNLIVE BY VASCO (WAS SILANIS)	✓	✓	✓
EURONOVATE		✓	
KOFAX BY LEXMARK	✓	✓	✓
NAMIRIALGMBH (FORMERLY XYZMO)	✓	✓	✓
SIGNIX		✓	
WOLTERS KLUWER	✓	✓	✓

Source: Celent; Vendor RFIs

ACCESS METHODS

The use of the Internet to speed up the process of capturing a signature is commonplace today. This has increased dramatically in the last ten years. In the last three years, mobile phones and tablets have expanded the use of Web for capturing e-signatures dramatically. Web and mobile devices allow banks to speed up the process of acquiring customers and closing business.

Even though the Internet has become ubiquitous, there are times when access is not possible. Celent asked vendors if offline e-signature capture was possible when the Web is unavailable. Table 3 outlines whether vendor solutions can be access online or offline or both, and if mobile access is available.

Table 3: Access Methods Offered by Vendor

	ADOBE	ALPHATRUST	SIGNNOW BY BARRACUDA	DOCUSIGN	EORIGNAL	ESIGNLIVE BY VASCO	EURONOVATE	KOFAX BY LEXMARK	NAMIRIAL GMBH	SIGNIX	WOLTER KLUWER
CUSTOMER PORTAL WITH SSO	■	■	■■	■	■■	■■	■■	□	■■	■	■
CUSTOMER PORTAL W/O SSO	■	■	x	■■	■■	■■	■■	■■	■■	■■	■■
EMAIL INVITATION	■■	■■	■■	■■	■■	■■	■	■■	■■	■■	■■
THIRD PARTY APPLICAT'N (AGENT PORTAL)	□	□	x	■	■	■■	■■	■	□	■	④
MOBILE APPLICAT'N	■■	■■	■■	■■	x	■■	■■	■■	■■	■■	■■
OFFLINE ACCESS (SEND & SIGN VIA MOBILE)	■■	/	■■	■■	x	■■	■■	□	■■	-	x
ONLINE APPLICAT'N (DIRECTS USER TO SIGNING CEREMONY)	■■	■■	■■	■■	■	■■	■■	■■	■■	■■	■■
AGGREGAT OR QUOTE SITE	■	■	x	■■	■	□	□	□	■	/	■■
MULTIPART Y ROUTING	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■
B2B AND B2C SUPPORT	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■

Source: Celent; Vendor RFIs. Legend: ■■ Available out of the box; ■ Configurable; □ Coding or integration required; / Under development or could develop; - On the roadmap; x Not available

E-SIGNATURE APPROACHES

E-signature methods have expanded over the last decade. They can take a variety of forms and sometimes use combinations of several technologies. Table 4 describes them, in order from less secure to more secure.

Table 4: Comparison of E-Signature Approaches

	METHOD	TYPICAL APPLICATION
 LESS SECURE	Click to sign / Click to wrap	User clicks button (e.g., "I Accept").
	Standard scripted (typed) signature	Signers choose a font to represent their signature and sign by simply typing their name.
	Voice	Signer's voice is recorded stating agreement.
	Graphic signature	Graphical representation of signature.
	User name and PIN or password	Uses user-defined user name and password or PIN.
	Two-factor authentication	Uses user-defined user name and password and PIN for two-factor authentication.
	Shared secrets	Uses security questions and answers or third party authentication services.
	Stored signature image	Stores an image of signatures and allows repeat signers to sign by using their saved signature.
	E-signature pad capture	Permits the use of a physical signature pad to upload signatures.
	Handwritten mouse signature	Uses online signature pads which allow users to draw their signature using a mouse and apply it to documents, making it seem as though it was signed with pen and paper.
MORE SECURE	Digital certificate / PKI	User submits information online. Software added to desktop applications attaches a secure file or key to submission. If key is used, the key in combination with related key held by recipient confirms user's identity and integrity of message.
	Biometric signature data	Identifies unique characteristics of each signer's signature, including speed and timing, to ensure validity of executed documents.

Source: Celent

The click-wrap method is the easiest method to implement and, not surprisingly, the least secure. Companies that decide to use click-wrap can use their choice of tools to create applications where users sign an electronic document by simply entering data and clicking buttons on screen. A key advantage of click-wrap is that "I Accept" buttons and their equivalents are ubiquitous; anyone who has used the Internet is familiar with them and how to use them to conduct business online.

The password/PIN method is often used in combination with click-wrap, and is more secure. To access the system or enter data, users have to enter information that only they know. The downside is that users often forget their access codes, and security is compromised if they share their access codes with others. For many online applications,

password/PIN alone may not provide sufficient security. Banks most likely will supplement these methods with another form of identity authentication.

The addition of shared secrets, and questions and answers that are only known by the signer, help expand the authentication of the signer. Other methods may include the use of text/SMS, email verification, or even phone number verification. In any of these cases, the signer must submit unique answers to questions or their cell phone number or email address. This increases the security because each is unique to the signer.

Tablets and touch screens have replaced wet signatures by allowing the signer to use a finger or stylus to sign the document. More often than not, this signing is done in front of an agent or representative so that visual identification as well as other means of checking an identity can be used.

Digital certificates can enhance security levels significantly. To access a system using digital certificates, users must have credentials on their PCs (usually issued by a certificate authority) that certify their identity. These encrypted files are password-protected and virtually impossible to forge, so unauthorized users of the PC are not able to misrepresent themselves. A typical application of digital certificates requires a live Internet connection so the certificate authority can validate the user's certificate at the time it is being used to "sign" an electronic document.

Public Key Infrastructure (PKI) is a highly secure method based on use of a pair of key files. A private key is accessible only to the user, while a public key is distributed to anyone with whom the user wishes to have secure communications. On receipt of a protected file, software compares the public and private keys to confirm both the sender's identity and the integrity of the message. The main drawback to PKI is that it requires an organization to set up users with PKI credentials, which can be prohibitively expensive, especially for one-time or limited use.

Biometric online signatures are based on the fact that every person's signature has measurable and unique characteristics. Biometric signature software, used in conjunction with an electronic tablet, records not only the appearance of the signature (the shape and height of letters, for example) but also other variables such as the speed with which the stroke is executed, how hard the stylus is applied to the writing surface, and so on. The resulting data file is unique to the signatory and may be used to determine with a high degree of confidence whose signature is applied to a document. The process is more secure than a certificate solution because there is no password to be lost or stolen, and biometric signatures cannot be duplicated.

In addition to offering excellent security, biometrics offers two advantages over other methods. First, the act of signing a document is steeped in tradition — it is what signatories have done for centuries. In addition, because no training or setup is needed to collect a biometric signature, biometrics is an especially good choice for point-of-sale applications in banks.

Table 5: Supported E-Signature Approaches by Vendor

	ADOBE	ALPHATRUST	SIGNNOW BY BARRACUDA	DOCUSIGN	EORIGINAL	ESIGNLIVE BY VASCO	EURONOVATE	KOFAX BY LEXMARK	NAMIRIAL GMBH	SIGNIX	WOLTER KLUWER
CLICK TO SIGN/ CLICK TO WRAP	■ ■	■ ■	X	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
E-SIGNATURE PAD CAPTURE	■ ■	■ ■	X	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	□
HANDWRITTEN MOUSE SIGNATURE	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
HANDWRITTEN SIGNATURE WITH WEB PAD/STYLUS	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
USER NAME AND PIN OR PASSWORD	X	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■	■ ■	■ ■	■ ■
TWO FACTOR AUTHENTICATION	X	■ ■	■ ■	■ ■	■	■ ■	■	■	□	■ ■	-
DIGITAL CERTIFICATE (PKI)	□	■ ■	X	■ ■	□	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
STANDARD SCRIPTED (TYPED) SIGNATURE	■ ■	■ ■	■ ■	■ ■	■ ■	X	■	□	/	■ ■	■ ■
STORED SIGNATURE IMAGE	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	X	-	■ ■	■ ■
SHARED SECRETS	■ ■	□	X	■ ■	■ ■	■ ■	■	□	□	■ ■	■ ■
GRAPHIC SIGNATURE	■ ■	■ ■	X	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
BIOMETRIC SIGNATURE DATA	X	X	X	X	■ ■	□	■ ■	■ ■	■ ■	-	X
KNOWLEDGE BASED AUTHENTICATION VIA 3RD PARTY	□	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	-	□	■ ■	■ ■
VOICE	X	X	X	X	■ ■	X	X	X	X	/	X

Source: Celent; Vendor RFIs. Legend: ■ ■ Available out of the box; ■ Configurable; □ Coding or integration required; / Under development or could develop; - On the roadmap; x Not available

SECURITY FEATURES

Security and authentication of electronic signatures is critical to banks. The security features available in the vendor systems are presented in Table 6. Security features often include additional methods of verifying identity above the single factor or two-factor authentications mentioned above. For example, two-factor authentications can include the use of SMS text/email or validation of email addresses or phone numbers to further the level of security. With a phone number validation, the signer receives a call, enters or

speaks a code shown on their computer/mobile screen, and if passed the signer is required to speak their name, which is recorded as a biometric print. Once validated, the signer has access to documents. The use of social networks like Facebook, Twitter, LinkedIn, and PayPal can be used as authentication to ensure the person signing is the person you want and need to sign. Other methods include backup security to mouse-drawn or finger-drawn signatures with digital certificates/signatures.

Table 6: Security Features

	ADOBE	ALPHATRUST	SIGNNOW BY BARRACUDA	DOCUSIGN	EORIGNAL	ESIGNLIVE BY VASCO	EURONOVATE	KOFAX BY LEXMARK	NAMIRIAL GMBH	SIGNIX	WOLTERS KLUWER
AUDIT LOG	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
DIGITAL FINGERPRINTS/CHECK SUMS OF DOCUMENTS	■ ■	■ ■	X	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	X
PHONE NUMBER VERIFICATION	□	□	■ ■	■ ■	■	X	■ ■	■ ■	/	/	□
SAVED BIOMETRIC SIGNATURES	■ ■	X	X	X	■ ■	□	■ ■	■ ■	X	/	■ ■
DIGITAL CERTIFICATE	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
SIGNER AND SESSION DATA CAPTURE	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
WEBCAM PHOTO AUTHENTICATION	X	X	X	X	■ ■	X	■ ■	■ ■	□	/	□
SSL DATA ENCRYPTION	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
SINGLE SIGN ON (SSO) VIA SAML	■ ■	/	■ ■	■ ■	■ ■	■ ■	■ ■	X	■ ■	■	/
SINGLE SIGN ON (SSO) VIA FORM BASED AUTHENTICATION	X	■ ■	X	X	■ ■	□	■ ■	X	■ ■	■	/
EITHER OF THE ABOVE SSO AT THE ENTERPRISE LEVEL	□	■ ■	X	■	■ ■	□	■ ■	■	■ ■	■	/

Source: Celent; Vendor RFIs. Legend: ■ ■ Available out of the box; ■ Configurable; □ Coding or integration required; / Under development or could develop; - On the roadmap; x Not available

RECOMMENDATIONS

Key Research Question

3

How can e-signature technology create a better customer experience?

The future of business is digital, and the adoption of technology is driving change. As a result, the traditional way of signing documents is changing. Paperless processes require electronic signatures.

E-signature adoption in banking is strong, and Celent expects the trend to remain constant. Banks that investigate e-signatures will be pleasantly surprised by how quickly and relatively inexpensively they can be implemented, as well as how easily and securely a paper signature process can be automated. But institutions should be aware of specific recommendations.

Be careful not to overengineer an e-signature solution

While there are a wide range of e-signature options available in the market, for most use cases a simple solution should suffice. Biometrics and other digital signage may offer the highest levels of security and authenticity, and repudiation rates for e-signatures are notoriously low, and many banks have viewed more complex solutions as overkill. Keep it simple and benefit from the simplicity and cost savings.

Consider the entire ecosystem

E-signature solutions are increasingly integrated into larger solution sets. While traditionally it was common to implement an e-signature as a point solution, today they are largely deployed through resellers within larger digital transformation priorities. Consider the use case and how it fits within the overall enterprise digital strategy. An e-signature will likely be one important piece of a much bigger puzzle.

Control the process

Thinking about how to best implement e-signatures will mean considering the type of device used, the specific delivery method, document types, and security/privacy needs. There are plenty of moving parts that make the entire process function smoothly. Financial institutions need to have a good handle on the process before they apply e-signatures, as the best use cases often involve process flows with significant compliance or risk implications.

E-SIGNATURE CHECKLIST

Celent suggests that CIOs and business leaders consider the following when considering e-signatures.

- Understand what business process will replace wet ink signatures with electronic signatures. Know the risk and use cases associated with the process and consider the experience of the signer when deciding what and how to deploy the e-signature software.
- Ask the vendors about experiences outside of banking because many have other financial services and industry experiences that have similar issues.

- Consider those vendors that have experience in banking either in North America or abroad and be aware of their sustainability in case a legal challenge arises in the future.
- Be sure that IT, business owners, legal, and compliance all are involved and in coordination in the decision.
- Don't underestimate the challenge that change brings and have a well thought out change management and communications strategy ready to implement along with the e-signature solution.

Was this report useful to you? Please send any comments, questions, or suggestions for upcoming research topics to info@celent.com.

APPENDIX 1A: E-SIGNATURE VENDORS

The following section provides a detailed overview of the e-signature vendor solutions, looking at technology, functionality, service capabilities, and customer base.

METHODOLOGY

Celent's objective in producing this report was to include as many as possible of the leading e-signature systems being used or actively sold to banks globally. Celent sent a detailed RFI to 45 e-signature system vendors across the globe; 11 responded to our request for information and are included in this report. Celent selected the companies to be sent an RFI by conducting secondary research, by talking to product developers, marketers, and technical staff, and by asking vendors who they perceived to be their competitors.

Although there are other companies with e-signature software offerings, we are confident that these 11 vendors represent most of the larger players in the market. Notable vendors missing from this report include Ascertia, iSign (formerly CIC), Legalesign, RightSignature (part of Citrix), Topaz Systems, HelloSign, PandaDoc, RPost, Sertifi, and eSign Systems; these vendors either declined participation or did not respond to multiple requests for participation.

Table 7: Profiled Vendors by Region According to Reported Client Base

VENDOR	PRODUCT NAME	NORTH AMERICA	EMEA	APAC	LATAM	PAGE IN REPORT
Adobe	Adobe Sign (an Adobe Document Cloud Solution)	✓	✓	✓	✓	19
AlphaTrust	PRONTOSign	✓				Error! Bookmark not defined.
SignNow by Barracuda	SignNow	✓	✓	✓	✓	Error! Bookmark not defined.
DocuSign	DocuSign Signature	✓	✓	✓	✓	23
eOriginal	eOriginal SmartSign®	✓	✓			Error! Bookmark not defined.
eSignLive by Vasco (was Silanis)	eSignLive	✓	✓	✓	✓	27
Euronovate	Euronovate e-signature platform	✓	✓			Error! Bookmark not defined.
Kofax by Lexmark	SignDoc	✓	✓	✓	✓	Error! Bookmark not defined.

VENDOR	PRODUCT NAME	NORTH AMERICA	EMEA	APAC	LATAM	PAGE IN REPORT
NamirialGmbh (formerly XYZMo)	SIGNificant, xyzmo, eSignAnywhere and Graphosign		✓		✓	Error! Bookmark not defined.
SIGNiX	SIGNiX MyDoX	✓				Error! Bookmark not defined.
Wolters Kluwer	Wolters Kluwer E-Sign	✓				Error! Bookmark not defined.

Source: [Celent, vendors](#)

The RFIs provided quantitative and qualitative data which is presented in the following profiles. Vendors had an opportunity to review their profiles for factual accuracy. Celent, of course, has retained final authority over the content of the published profiles. Some of the vendors profiled in this report are Celent clients, and some are not. No preference was given to Celent clients either for inclusion in the report.

Not all data gathered from the detailed RFI has been included in each profile. Rather, Celent has attempted to capture key points and values about each vendor at an appropriate level. Additionally some information is presented in comparative tables. Unpublished information remains in the Celent knowledge base and is available to Celent's subscription or consulting clients.

ADOBE SYSTEMS INC.: ADOBE SIGN (AN ADOBE DOCUMENT CLOUD SOLUTION)

ADOBE

Adobe (NASDAQ: ADBE) is a global leader in digital marketing and digital media solutions. Its tools and services allow Adobe customers to create digital content and automate the business processes that surround it. Adobe acquired e-signature vendor EchoSign in 2011; Adobe's e-signature service is now available as Adobe Sign, part of Adobe Document Cloud, which was launched in 2015. Adobe Document Cloud includes Adobe Acrobat DC, Adobe Acrobat Reader, several prebuilt integrations with systems from Microsoft, Salesforce, Workday, Apttus, and more — and collectively is aimed at accelerating and streamlining business by making manual, paper-based processes 100% digital.

Adobe Sign has more than 60,000 customers across all industries, including insurance. It supports both electronic and digital signatures. With this solution, you can build and customize end-to-end digital workflows — from document creation and collaboration; to signing, approvals, and certified delivery; to secure archival of final documents and audit trails.

Table 8: Company and Product Snapshot

COMPANY	Revenues from product	Adobe does not disclose this information.
	Company revenues	\$5.85 billion in FY2016 (ended December 2, 2016)
	Year founded	1982
	Exchanges/Symbols	NASDAQ: ADBE
	Headquarters Location	Global: San Jose, CA, USA Regional: North American HQ: San Jose, CA, USA
ESIGNATURE SYSTEM	Name	Adobe Sign (an Adobe Document Cloud Solution)
TARGET MARKET		Adobe Document Cloud does not break out customer data by region, but markets its products worldwide.

Source: Vendor RFI

COMPONENTS AND FUNCTIONALITY

Table 9 describes the components offered as add-ons or part of Adobe Sign (an Adobe Document Cloud Solution).

Table 9: Features and Functions of E-Signature Solution

COMPONENT	AVAILABILITY
ELECTRONIC CREATION OF FORMS FOR SIGNING	Available ONLY bundled with e-Signature solution (no additional cost)
ELECTRONIC DELIVERY OF FORMS FOR SIGNING	Available ONLY bundled with e-Signature solution (no additional cost)
ELECTRONIC SIGNATURE	Available ONLY bundled with e-Signature solution (no additional cost)
FORMS AND DOCUMENT RETENTION / ARCHIVING	Available ONLY bundled with e-Signature solution (no additional cost)
IDENTITY AUTHENTICATION	Available ONLY bundled with e-Signature solution (no additional cost)
TRANSACTION MONITORING	Available ONLY bundled with e-Signature solution (no additional cost)
REPORTING AND ANALYTICS	Available ONLY bundled with e-Signature solution (no additional cost)

Source: Vendor RFI

Table 10: Functionality

FUNCTIONALITY	AVAILABILITY
DOCUMENT CREATION: Document preparation for signature and data placement, PDF assembly	File Support (PDF, doc(x), ODT, etc.)
	Available out of the box
	Form Fields
	Available out of the box
	Signature and initial boxes
	Available out of the box
	Multiple signer roles
	Available out of the box
ACCESS: Options for initiating the transaction	Lever/hierarchy signing roles
	Available out of the box
	Templates
	Available out of the box
	PDF Text Tag
	Available out of the box
	X,Y Coordinates
	Not available
	Customer portal with Single Sign On
	Configurable using simple tools targeted for a business user
	Customer portal without Single Sign On
	Configurable using simple tools targeted for a business user
	Email invitation
	Available out of the box
	Third party application (agent management system, eApplication, etc.)
	Available with integration to a third party solution

FUNCTIONALITY	AVAILABILITY
	Mobile application directs user to signing ceremony
	Ability to send and sign offline via mobile
	Online application directs user to signing ceremony
	Aggregator quote site
	Multipart routing
	B2B, B2C, and Internal
SUPPORTED SIGNATURE TYPES: The different types of e-signatures that the system accepts.	Click to sign/Click wrap
	Electronic Signature Pad Capture
	Handwritten Mouse Signature
	User defined name/password <u>or</u> PIN
	Two-Factor Authentication
	Digital Certificate (PKI) Signature
	Standard Scripted (Typed) Signature
	Stored Signature Image
	Shared secrets
	Graphic Signature
	Biometric Signature Data
	Knowledge-Based Third Party
SIGNING FEATURES: Features that enhance the user experience and/or guide the signer or simplify process	Voice
	Custom Branding
	Optional Attachments
	Real Time Instruction Bar
	Tool Tips
	In Good Order Rules
	Consolidated Packaging
	Copy of Document for Signer

FUNCTIONALITY	AVAILABILITY
Co-Browsing	Not available
Expiry Dates	Configurable using simple tools targeted for a business user
Required Fields	Configurable using simple tools targeted for a business user

Source: Vendor RFI

It supports multiple languages such as English, French, German, Spanish, Catalan, Basque, Brazilian Portuguese, Portuguese, Japanese, Chinese (Simplified), Chinese (Traditional), Korean, Indonesian, Malay, Thai, Vietnamese, Croatian, Czech, Polish, Romanian, Russian, Slovenian, Slovakian, Turkish, Ukrainian, Danish, Dutch, Finnish, Hungarian, Icelandic, Italian, Norwegian, and Swedish.

CUSTOMER BASE

Adobe does not disclose any client information.

TECHNOLOGY

An overview of the system's technology options is provided in Table 11.

Table 11: Technology Options

INTERNAL BUSINESS USER INTERFACE	Browser based Touch screen interfaces are enabled
CONFIGURATION AND DEVELOPMENT USER INTERFACE	Browser based Touch screen interfaces are enabled.
DATABASES SUPPORTED	Preferred: Can connect to any database through APIs and preintegrated solutions (e.g., Salesforce). Additional options: None
CLOUD STORAGE / DOCUMENT APPLICATION INTEGRATION OPTIONS	Gmail, Google Drive, Dropbox, OneDrive, Microsoft Word, Microsoft Outlook, Evernote
SCALABILITY	Largest deployment: Cloud-based solution scales to any size. SaaS deployment backed by AWS-driven data centers scale dynamically based on demand.

Source: Vendor RFI

IMPLEMENTATION, PRICING, AND SUPPORT

The average time to go live is typically one to three months depending on the integration requirements and the level of configuration required.

The license or SaaS/Cloud fees are typically based on number of functional components/modules, number of concurrent users, number of total or named users, premium volume, number of states or geographies, enterprise license / flat fee, and other considerations.

The total cost to implement Adobe Sign (an Adobe Document Cloud Solution) can vary according to the capabilities and available resources of the client, and the overall scope of system use. Adobe does not disclose pricing information.

DOCUSIGN: DOCUSIGN SIGNATURE

DOCUSIGN

DocuSign is a San Francisco-and-Seattle-based company that provides electronic signature technology and Digital Transaction Management services for facilitating electronic exchanges of contracts and signed documents. DocuSign's features include authentication services, user identity management, and workflow automation.

DocuSign is changing how business gets done by empowering more than 250,000 companies and 100 million users in 188 countries to sign, send, and manage documents anytime, anywhere, on any device, with confidence. DocuSign replaces printing, faxing, scanning, and overnighting documents with the easiest, fastest, most trusted way to make every approval and decision digital.

Table 12: Company and Product Snapshot

COMPANY	Revenues from product	Confidential (private company)
	Company revenues	Confidential (private company)
	Year founded	2003
	Exchanges/Symbols	N/A
	Headquarters Location	Global: San Francisco, Seattle
		International: Dublin, London, Paris, Sao Paolo, Sydney, Tokyo
ESIGNATURE SYSTEM	Name	DocuSign Signature
TARGET MARKET	North America, EMEA, APAC and LATAM: Consumers, SMBs, Commercial Business and Large Public and Private Sector Enterprises	

Source: Vendor RFI

COMPONENTS AND FUNCTIONALITY

Table 13 describes the components offered as add-ons or part of DocuSign Signature.

Table 13: Features and Functions of ESignature Solution

COMPONENT	AVAILABILITY
ELECTRONIC CREATION OF FORMS FOR SIGNING	Can be licensed/implemented as a stand-alone component, no other applications required
ELECTRONIC DELIVERY OF FORMS FOR SIGNING	Can be licensed/implemented as a stand-alone component, no other applications required
ELECTRONIC SIGNATURE	Can be licensed/implemented as a stand-alone component, no other applications required

FORMS AND DOCUMENT RETENTION / ARCHIVING	Can be licensed/implemented as a stand-alone component, no other applications required
IDENTITY AUTHENTICATION	Can be licensed/implemented as a stand-alone component, no other applications required
TRANSACTION MONITORING	Can be licensed/implemented as a stand-alone component, no other applications required
REPORTING AND ANALYTICS	Can be licensed/implemented as a stand-alone component, no other applications required

Source: Vendor RFI

Table 14: Functionality

FUNCTIONALITY		AVAILABILITY
DOCUMENT CREATION: Document preparation for signature and data placement, PDF assembly	File Support (PDF, doc(x), ODT, etc.)	Available out of the box
	Form Fields	Available out of the box
	Signature and initial boxes	Available out of the box
	Multiple signer roles	Available out of the box
	Lever/hierarchy signing roles	Available out of the box
	Templates	Available out of the box
	PDF Text Tag	Available out of the box
	X,Y Coordinates	Available out of the box
ACCESS: Options for initiating the transaction	Customer portal with Single Sign On	Configurable using simple tools targeted for a business user
	Customer portal without Single Sign On	Available out of the box
	Email invitation	Available out of the box
	Third party application (agent management system, eApplication, etc.)	Configurable using tools targeted for an IT user
	Mobile application directs user to signing ceremony	Available out of the box
	Ability to send and sign offline via mobile	Available out of the box
	Online application directs user to signing ceremony	Available out of the box
	Aggregator quote site	Available out of the box
	Multiparty routing	Available out of the box
	B2B, B2C, and Internal	Available out of the box

FUNCTIONALITY	AVAILABILITY	
SUPPORTED SIGNATURE TYPES: The different types of e-signatures that the system accepts.	Click to sign/Click wrap	Available out of the box
	Electronic Signature Pad Capture	Available out of the box
	Handwritten Mouse Signature	Available out of the box
	User defined name/password <u>or</u> PIN	Available out of the box
	Two-Factor Authentication	Available out of the box
	Digital Certificate (PKI) Signature	Available out of the box
	Standard Scripted (Typed) Signature	Available out of the box
	Stored Signature Image	Available out of the box
	Shared secrets	Available out of the box
	Graphic Signature	Available out of the box
	Biometric Signature Data	Not available
	Knowledge-Based Third Party	Available out of the box
SIGNING FEATURES: Features that enhance the user experience and/or guide the signer or simplify process	Voice	Not available
	Custom Branding	Available out of the box
	Optional Attachments	Available out of the box
	Real Time Instruction Bar	Available out of the box
	Tool Tips	Available out of the box
	In Good Order Rules	Available out of the box
	Consolidated Packaging	Available out of the box
	Copy of Document for Signer	Available out of the box
	Co-Browsing	On the roadmap
	Expiry Dates	Available out of the box
	Required Fields	Available out of the box

Source: [Vendor RFI](#)

It supports multiple languages and is in production with 43 languages.

CUSTOMER BASE

DocuSign does not provide a breakdown of their customers. Ten of the top fifteen US financial services companies use DocuSign.

TECHNOLOGY

An overview of the system's technology options is provided in Table 15

Table 15: Technology Options

INTERNAL BUSINESS USER INTERFACE	Browser based Touch screen interfaces are enabled
CONFIGURATION AND DEVELOPMENT USER INTERFACE	Touch screen interfaces are not enabled.
DATABASES SUPPORTED	Preferred: SQL Server Additional options: Other NoSQL databases
CLOUD STORAGE / DOCUMENT APPLICATION INTEGRATION OPTIONS	Gmail, Salesforce.com, Google Drive ,Dropbox, Sharepoint, OneDrive, Microsoft Word, Microsoft Outlook, Evernote
SCALABILITY	Largest deployment: Not disclosed

Source: Vendor RFI

IMPLEMENTATION, PRICING, AND SUPPORT

The average time to go live can be seconds if using the application on the Web. The time required for enterprise clients depends on the integration requirements and the level of configuration required.

The license or SaaS/Cloud fees are typically based on number of functional components/modules, number of concurrent users, premium volume, per transaction, and other (Credit Union customers can purchase based on assets under management).

The total cost to implement DocuSign Signature can vary according to the capabilities and available resources of the client, and the overall scope of system use.

DocuSign standard account pricing varies from free to \$40 per user per month and advanced solutions for enterprises are custom quoted. For additional information on pricing, visit <https://www.docusign.com/b/products-and-pricing>.

ESIGNLIVE BY VASCO: ESIGNLIVE

ESIGNLIVE

Founded in 1992, eSignLive (formerly Silanis Technology) introduced the world's first out of the box, e-signature software. eSignLive is part of VASCO Data Security International, Inc. — a digital security solution and service provider with more than 10,000 customers across 100 countries. eSignLive is an electronic signature solution that enables documents to be securely signed electronically in any channel and on any device. eSignLive can be deployed in a public cloud, private cloud, or on-premises. Organizations use eSignLive to improve customer experience, increase productivity, and reduce errors and costs by automating workflows and enforcing business rules.

Table 16: Company and Product Snapshot

COMPANY	Company revenues	\$192.3 million US (2016)
	Year founded	1991 (VASCO); 1992 (eSignLive)
	Exchanges / Symbols	VASCO (parent company) is publicly traded on the NASDAQ: VDSI
	Headquarters Location	Global: Oakbrooke Terrace, IL, USA Regional: North American HQ: HQ for eSignLive division: Montreal, Canada
E-SIGNATURE SYSTEM	Name	eSignLive
TARGET MARKET		All size financial institutions

Source: Vendor RFI

COMPONENTS AND FUNCTIONALITY

Table 17 describes the components offered as add-ons or part of eSignLive.

Table 17: Features and Functions of E-Signature Solution

COMPONENT	AVAILABILITY
ELECTRONIC CREATION OF FORMS FOR SIGNING	Available ONLY bundled with e-Signature solution (no additional cost)
ELECTRONIC DELIVERY OF FORMS FOR SIGNING	Available ONLY bundled with e-Signature solution (no additional cost)
ELECTRONIC SIGNATURE	Available ONLY bundled with e-Signature solution (no additional cost)
FORMS AND DOCUMENT RETENTION / ARCHIVING	Available ONLY bundled with e-Signature solution (no additional cost)
IDENTITY AUTHENTICATION	Available through third party provider or bundled with e-Signature solution – text code or Q&A (no additional cost)
TRANSACTION MONITORING	Available ONLY bundled with e-Signature

	solution (no additional cost)
REPORTING AND ANALYTICS	Available ONLY bundled with e-Signature solution (no additional cost)

Source: Vendor RFI

According to the vendor, the majority of eSignLive functionality is available out of the box.

Table 18: Functionality

FUNCTIONALITY		AVAILABILITY
DOCUMENT CREATION: Document preparation for signature and data placement, PDF assembly	File Support (PDF, doc(x), ODT, etc.)	Available out of the box
	Form Fields	Available out of the box
	Signature and initial boxes	Available out of the box
	Multiple signer roles	Available out of the box
	Lever/hierarchy signing roles	Available out of the box
	Templates	Available out of the box
	PDF Text Tag	Available out of the box
	X,Y Coordinates	Available out of the box
ACCESS: Options for initiating the transaction	Customer portal with Single Sign On	Available out of the box
	Customer portal without Single Sign On	Available out of the box
	Email invitation	Available out of the box
	Third party application (agent management system, eApplication, etc.)	Available out of the box
	Mobile application directs user to signing ceremony	Available out of the box
	Ability to send and sign offline via mobile	Available out of the box
	Online application directs user to signing ceremony	Available out of the box
	Aggregator quote site	Coding required
	Multiparty routing	Available out of the box
	B2B, B2C, and Internal	Available out of the box
SUPPORTED SIGNATURE TYPES: The different types of e-signatures that the system accepts.	Click to sign / Click wrap	Available out of the box
	Electronic Signature Pad Capture	Available out of the box
	Handwritten Mouse Signature	Available out of the box
	User defined name/password <u>or</u> PIN	Available out of the box

FUNCTIONALITY	AVAILABILITY	
	Two-Factor Authentication	Available out of the box
	Digital Certificate (PKI) Signature	Available out of the box
	Standard Scripted (Typed) Signature	Not available
	Stored Signature Image	Available out of the box
	Shared secrets	Available out of the box
	Graphic Signature	Available out of the box
	Biometric Signature Data	Available with integration to a third party solution
	Knowledge-Based Third Party	Available out of the box
	Voice	Not available
SIGNING FEATURES: Features that enhance the user experience and/or guide the signer or simplify process	Custom Branding	Available out of the box
	Optional Attachments	Available out of the box
	Real Time Instruction Bar	Available out of the box
	Tool Tips	Available out of the box
	In Good Order Rules	Available out of the box
	Consolidated Packaging	Available out of the box
	Copy of Document for Signer	Available out of the box
	Co-Browsing	Not available
	Expiry Dates	Available out of the box
	Required Fields	Available out of the box

Source: Vendor RFI

It supports multiple languages for both senders and signers, and is in production with English, French, Danish, Dutch, Spanish, German, Japanese, Portuguese, Italian, Russian, Chinese (simplified and traditional), and Korean.

CUSTOMER BASE

Table 19 provides a breakdown of the bank company client counts by region.

Table 19: Customer Base (Bank Companies Only)

	NORTH AMERICA	EMEA	APAC	LATAM
TOTAL BANK COMPANIES IN PRODUCTION	189	13	10	1
NEW BANK CLIENTS SINCE 2013	168	7	9	0

DEPLOYMENT METHOD (PERCENTAGE OF CLIENT BASE)	On Premise:18 %	On Premise:46 %	On Premise: 0 %	On Premise: 0 %
	Hosted: 1%	Hosted: 8%	Hosted: 20%	Hosted: 0%
	In the cloud: 81%	In the cloud: 46%	In the cloud: 80%	In the cloud: 100%
MARQUEE CLIENTS	Wells Fargo, JP Morgan Chase, US Bank, SunTrust, RBC Royal Bank, BMO	Not provided	WestPac	Not provided

Source: Vendor RFI

TECHNOLOGY

An overview of the system's technology options is provided in Table 20.

Table 20: Technology Options

INTERNAL BUSINESS USER INTERFACE	Browser based and native mobile apps or mobile SDKs for iOS and Android Touch screen interfaces are enabled
CONFIGURATION AND DEVELOPMENT USER INTERFACE	Browser based and native mobile apps or mobile SDKs for iOS and Android Touch screen interfaces are enabled.
DATABASES SUPPORTED	Preferred: Oracle; Microsoft SQL Server; DB2/UDB; Other SQL Additional options: None
CLOUD STORAGE / DOCUMENT APPLICATION INTEGRATION OPTIONS	Gmail, Google Drive, Dropbox, OneDrive, Microsoft Word, Microsoft Outlook, Evernote
SCALABILITY	Largest deployment: Largest e-signature initiative ever undertaken in government (US Army with 1.4+ million users); in financial services, USAA — serving millions of military members and their families with competitive rates on insurance, banking, and investment services — has implemented eSignLive across 20+ lines of business and they process tens of millions of documents from USAA annually.

Source: Vendor RFI

IMPLEMENTATION, PRICING, AND SUPPORT

The average time to go live is typically one to three months depending on the integration requirements and the level of configuration required. Non-integrated customers can go live in a matter of days when using eSignLive's web service, mobile apps or connectors for third-party apps such as Salesforce.

The license or SaaS/Cloud fees are typically based on number of functional components/modules, number of concurrent users, number of total or named users, premium volume, number of states or geographies, enterprise license / flat fee, per transaction, and other.

The total cost to implement eSignLive can vary according to the capabilities and available resources of the client, and the overall scope of system use.

Pricing for eSignLive's Professional Plan for sender-initiated processes is based on the number of users (e.g., \$20 per user per month; user volume discounts available). eSignLive's Enterprise Plan for integrated, system-generated processes using API/SDKs is based on document transaction volume (contact vendor for pricing information).

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Typical projects we support related to e-signatures and STP include:

Vendor short listing and selection. We perform discovery specific to you and your business to better understand your unique needs. We then create and administer a custom RFI to selected vendors to assist you in making rapid and accurate vendor choices.

Business practice evaluations. We spend time evaluating your business processes, particularly in [list several here]. Based on our knowledge of the market, we identify potential process or technology constraints and provide clear insights that will help you implement industry best practices.

IT and business strategy creation. We collect perspectives from your executive team, your front line business and IT staff, and your customers. We then analyze your current position, institutional capabilities, and technology against your goals. If necessary, we help you reformulate your technology and business plans to address short-term and long-term needs.

SUPPORT FOR VENDORS

We provide services that help you refine your product and service offerings. Examples include:

Product and service strategy evaluation. We help you assess your market position in terms of functionality, technology, and services. Our strategy workshops will help you target the right customers and map your offerings to their needs.

Market messaging and collateral review. Based on our extensive experience with your potential clients, we assess your marketing and sales materials — including your website and any collateral.

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