Digital transformation gave rise to modern Systems of Record and Systems of Engagement for key business and communication processes. We are now seeing the rise of modern Systems of Agreement for automating and connecting the agreement process—allowing companies to accelerate and simplify how they do business.
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Executive Summary

Digital transformation is making it faster and easier to do business. Companies have invested billions of dollars to modernize their Systems of Record (SofR), such as CRM\(^1\), HCM\(^2\), and ERP\(^3\), and their Systems of Engagement (SofE), such as Marketing Automation and internal collaboration applications. Yet for most companies, there is one critical system that has yet to be modernized, despite being central to the process of doing business. It is the company’s System of Agreement (SofA): the collection of technologies and processes used for preparing, signing, acting on, and managing agreements.

Systems of Engagement (SofE)
Systems used by customers and employees for digital interactions with and within companies

Systems of Agreement (SofA)
Systems for preparing, signing, acting on, and managing agreements

Systems of Record (SofR)
Authoritative sources for various types of business data, such as customer records, employee records, and inventory

A System of Agreement is the connecting point for agreement processes that span SofR, SofE, and every business function—contracts for Sales, employment offers for Human Resources, non-disclosure agreements for Legal, among hundreds of other agreement types. (See the next page’s figure for more than 70 types of agreements across ten business functions.)

If your System of Agreement is like most companies’, it is rife with manual processes, slow turnaround times, and human errors. Such legacy Systems of Agreement are needlessly burning time and money. They are also undermining the experiences of customers, employees, and partners. More generally, when you consider that agreements are pervasive across every size and type of business, legacy Systems of Agreement are imposing a persistent and perennial drag on business productivity across all sectors of the economy.

Some companies have already taken the first step to transformation. They have implemented e-signature technology to break the bottleneck of needing a physical signature—a crucial and valuable breakthrough. But important as it is, e-signature addresses a single stage of the larger agreement process, leaving manual

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\(^1\) Customer Relationship Management  
\(^2\) Human Capital Management  
\(^3\) Enterprise Resource Planning
Agreements are the foundation of business, and they are everywhere.

Sales
- Sales Order Processing
- Customer Account Provisioning
- Special Deal Terms
- Referral Agreements
- Reseller Agreements
- Partner Agreements
- Sales Support
- Loan Documents
- Support Agreements and Renewals

Marketing
- Event Registration
- Customer Communication Approvals
- Mass Mailing/Email Approval
- Event Vendor Agreements
- Rebate Agreements
- Sponsorship Agreements
- Promotion Agreements
- Advertising Contracts
- Press Release Approvals
- Brand Licensing Agreements
- Media Plan Sign-offs

Services
- Account Change
- Service/Work Orders
- Terms Change
- Self-Service Requests
- Compliance
- Field Service
- New/Policy Applications
- Policy Cancellations/Suspensions
- Independent Agency Licensing
- EFT Authorization

Human Resources
- Offer Letters
- New Hire Paperwork
- Candidate NDA
- On/Off-boarding Checklist
- Employee Policy Distribution and Signature
- Contractor Agreements
- Non-disclosure
- PTO Management
- Performance Appraisal
- Background Checks

Finance
- Invoice Processing
- Expense Processing
- Capitalization Management
- Audit Sign-off
- Policy Management
- Inventory Sign-off
- Asset Transfer/Retirement
- Grant Applications
- Sales and Use Tax Return
- Consumer Account Opening
- Deposit Products

IT/Operations
- Asset Tracking
- Change Requests
- Requirements Sign-off
- Access Management
- Incident Reporting
- Production Change Authorization
- Maintenance Authorization
- Authorization
- Real Estate Approval
- Project Budget Approvals

Legal
- NDA's
- Contract Management
- Internal Compliance
- IP Licensing
- Patent Applications
- Board Minutes
- Affidavits
- Summons
- Engagement Letters
- Memoranda of Understanding

Facilities
- Front Desk Sign-in
- Work Orders
- Lease Agreements
- Move In/Out Requests
- Parking Permits
- Building Maintenance
- Construction CAD Drawings
- Equipment Loan Agreements
- Change/Justification Forms
- Building Permits
- Change Orders

Product Management
- Change Management
- Release Management
- Code Review Reporting
- Requirements Acceptance
- Release Scope/Commitment
- Policy Approval
- Beta/SDK Agreements
- Developer Program Enrollment
- Product Development Methods
- New Product Evaluation
- New Offering Announcement

Procurement
- Purchase Order
- Statement of Work
- Master Services Agreement
- RFP Sign-off
- Supplier Compliance
- Service Level Agreements
- Termination Letters
- Software License Agreements
- Rate Cards
- Invoice Processing
- Subcontractor Agreements
- Vendor Contracts

processes elsewhere. For example, in preparing an agreement, people often end up rekeying data that exists in another system, such as customer, product, or pricing information. Or, when acting on a just-signed agreement, people often need to manually transfer the agreement terms into, for example, billing systems. Thus, what happens before and after the signature needs the same acceleration that e-signature has brought to the signing process.

This need is giving rise to the modern System of Agreement, which is automated and connected end-to-end. Whereas legacy Systems of Agreement had no underlying platform, modern Systems of Agreement have a purpose-built platform and applications to accelerate the process of doing business. A modern System of Agreement connects a variety of other systems, so an agreement can move from preparation through signature, enactment, and management in a highly automated way. Similar to how CRM platforms emerged for customer data, HCM platforms emerged for HR data, and ERP platforms emerged for Finance and Operations data, modern Systems of Agreement will play a similar role for agreements and agreement processing.

System of Agreement platforms will be distinguished by how they handle agreements’ unique legality sensitivities; how connectable they are to other systems; how easy they are to try, deploy, and use; and how readily they can incorporate new developments in emerging technologies like artificial intelligence, blockchains, and smart contracts.

Given that agreements are everywhere within a business, companies that modernize now can realize substantial benefits in cost reduction and customer experience, as well as gain a competitive edge against slower movers. To benchmark your System of Agreement against best practices, and to identify next steps in modernization, a three-minute interactive assessment tool is available.
The core business process that has yet to be modernized

Digital transformation has accelerated how companies do business. E-commerce lets customers get what they want, at any time, from anywhere. HCM software allows employee records to be accessed, updated, and shared far faster than when they were in file cabinets or spread among file servers. The same can be said of information managed in CRM, ERP, and other, now-common software platforms. They have each modernized key processes for getting business done, often replacing paper-based, manual processes. Yet there is one critical system that has yet to be modernized, despite being central to the process of doing business: the System of Agreement.

A System of Agreement is about automating the core of doing business: the agreement process. Every organization runs on agreements, from customer and partner contracts to employment agreements to various forms of internal approvals and sign-offs. Agreements are different from normal documents because they often involve legal commitments and can be subject to regulatory rules about how they are signed and retained. These rules may differ by the type of agreement and by regional laws. Thus, agreements need specialized processes and systems.

So, what exactly is a System of Agreement? It’s the means by which an agreement goes through the four phases of its lifecycle: Prepare, Sign, Act, and Manage. For most companies, this lifecycle today involves a mess of manual processes, people, and legacy technologies, as illustrated below.

Legacy agreement processes are often manual and fragmented.
During the Prepare stage, numerous contributors create and review content in an almost entirely manual process of unpredictable duration. To be fair, word processing and email did wonders in bringing this process into the 20th century. Unfortunately, we are now almost two decades into the 21st century, and frankly, most enterprises have nothing new to show for it, just more and more email clamoring for more and more attention.

In contrast, when it comes to signing agreements, there has been a breakthrough. Electronic signature solutions from companies like DocuSign allow businesses to distribute, sign, and collect agreements without resorting to printed paper. This can accelerate turnaround time dramatically, reduce costs, and largely eliminate errors. As the research firm Gartner recently concluded, “Having reached mainstream adoption, the real-world benefits of e-signature are predictable, broadly acknowledged and have been realized by thousands of organizations across millions of users.”

E-signature has another important effect: It breaks the bottleneck imposed by pen-and-ink signatures, which are inherently manual. With that obstacle removed, there is a real possibility of digitally transforming the end-to-end agreement process.

Digital transformation holds particular promise for the next step in the agreement lifecycle: Act. Today, for an agreement’s terms to be enacted, information must be extracted and entered into a variety of Systems of Record, triggering work orders, inventory purchasing, payments, and the like, as well as into Systems of Engagement, alerting employees, customers, and partners to changes. When all this is done manually, delays and errors are inevitable, dragging down productivity, not to mention creating the occasional escalation that can put even the most valuable relationships at risk.

Finally, once agreements are enacted, they need to be stored and managed. Once again, the 20th century made a terrific contribution: In virtually all enterprises, this phase of the lifecycle truly has become digital. Unfortunately, it has not become smart. That is, when an agreement is filed, it is too often forgotten—out of sight, out of mind. This means missed opportunities for changes in pricing at renewals, which can lead to revenue leakage; it can also mean missed entitlements, thereby wasting vigorously negotiated terms and conditions. Truth be told, when it comes to the Manage phase of their Systems of Agreement, most companies have no system at all.
Costs of legacy Systems of Agreement

In a survey conducted by Forrester Research, the firm reported that, of those IT and line of business decision makers surveyed, all experienced a combination of challenges related to agreements:

- Difficulty maintaining visibility into the location and status of paper-based documents
- Lack of security over printed documents
- Difficulty administering and controlling documents over time
- Difficulty collecting and managing documents from multiple sources
- Cumbersome paper-oriented tasks such as scanning and document management
- Costs and delays due to human errors while executing manual processes

These are not niche problems. They apply to businesses of every size, industry, and geography. More generally, in addition to the specifics above, companies with legacy Systems of Agreement:

- **Waste time.** Where once it was accepted that turning around an agreement could take days or weeks, it should now be measured in minutes or hours.

- **Waste money.** If an agreement process has many manual steps, it will cost five to ten times as much as an automated equivalent, mostly due to unnecessary time spent on manual work. As well, if it still involves paper and printing, there is further unnecessary costs in materials.

- **Lose revenue** to competitors who can deliver a faster, easier process of doing business. Especially with sales agreements, if a company's closing process is slower and harder than its competitors', business and sales productivity will be lost; it is only a question of how much.

- **Damage customer and employee satisfaction with outdated paper processes that people hate.** Amazon, Netflix, and Uber have trained people to expect the speed and simplicity of on-demand services—anytime, anywhere, from any device. Companies that drag against this expectation will increasingly alienate their customers and employees.

- **Risk legal and compliance exposure due to a lack of standardization and security.** Many companies cannot even find all their agreements, much less know that they are secure and were executed in a legally enforceable way. In addition, many companies have employees who are creating new agreements based on out-of-date templates that were downloaded from a file server in the past and never checked for updates. This lack of visibility into agreement processes and content can lead to very bad legal surprises.

These factors are driving companies to modernize their Systems of Agreement. Even if some of the parts have already been digitized—such as with word processing, email, and electronic signature—a legacy System of Agreement is a collection of disconnected parts that rely on manual processes to make the parts work together. What’s necessary is a technology platform that connects the parts into an automated whole.
Modern Systems of Agreement

Just as CRM, HCM, and ERP developed purpose-built platforms to manage data and to drive workflows in their respective areas, a modern System of Agreement needs its own purpose-built platform. This platform must act as a hub to coordinate and connect with all the other systems and processes that feed, support, or consume agreements—including CRM, HCM, and ERP systems themselves.

Such platform technology is emerging now. A useful way to think about it is in terms of the Prepare, Sign, Act, and Manage stages’ activities.

Prepare
These activities are about creating an agreement to the point that it is ready for signing.
For example:
• Create a document in a productivity application like Microsoft Word or Google Docs, then easily transfer the document into an agreement process.
• Provide industry-approved agreement templates, such as those required by regional real estate associations.
• Pull data from systems of record—like CRM, HCM, and ERP—to automatically populate parts of an agreement, such as customer, product, and pricing information.
• Automatically generate an agreement with content blocks that dynamically configure themselves based on, for example, the signer’s geographic region.
• With a wizard-like experience, guide the signer to provide information necessary to automatically create an agreement customized to his or her needs, such as for a loan application.
• Allow multiple parties to collaborate and comment on the draft agreement in real time, so the deliberations are retained as part of the agreement’s legally admissible record.

Sign
These activities are about getting the signature executed in a legally valid manner.
For example:
• Route the agreement to multiple parties with different roles, like reviewers, approvers, and signers. For signers, some may only sign in a certain order, and others may sign in parallel.
• Identify each signer with a method appropriate to the agreement type and regional laws. This could range from a simple email authentication to the signer’s presenting an official document via video conference.
• Monitor the status of each participant in the process, so it’s clear who still needs to do what.
• Certify the signing process and the completed agreement, including a detailed record of who did what, how they were authenticated, and other contextual information.

Act
These activities are about fulfilling the signed agreement’s terms.
For example:
• If the agreement requires a payment, automatically transfer the amount to a billing system or, better, collect the payment as part of the signing process.
• If the signer has provided new or updated information as part of the process, automatically transfer that information back to the relevant system of record, such as a CRM system.
• Trigger other processes based on an agreement’s completion, such as to provision a new customer account.

Manage
These activities are about managing agreements after they are completed.
For example:
• Retain agreements securely in a centralized place, or maintain centralized access to agreements that reside across different repositories.
• Retrieve agreements based on a variety of criteria, including AI-driven® concept search.
• Report on agreement completion, turnaround time, and various other trends.
• Reuse new agreements as templates for future agreements.

These capabilities are not futures. A modern System of Agreement platform can enable them today. The result is reduced time, cost, and risk, as well as an enhanced customer and employee experience.

® AI is artificial intelligence technology.
Success factors for modern Systems of Agreement

The previous section explained what a modern System of Agreement does. It is as important to understand how these activities need to be accomplished for success. This leads to the key requirements of a System of Agreement platform (SofA platform hereafter).

Legality
The Sign stage was—and, for many companies, still is—the bottleneck in modernizing Systems of Agreement because of sensitivities around legality. The signature is the moment of legal commitment. Done wrong, it can have disproportionately severe consequences. So, any SofA platform needs to start with getting e-signature right: Does it provide all the options for properly authenticating signers? How does it generate court-admissible evidence? For global companies, is it accepted worldwide? For companies in regulated industries, does it support the relevant laws and rules? There are many more of these questions, each with their own consequences.

Connectivity
The “system” in System of Agreement refers to a collection of connected components. The central component is the SofA platform, which must readily connect to a large number of other systems. The three kinds of connectivity that matter are:

• **Integrations with companies’ existing systems.** These are prebuilt connections to CRM, ERP, HCM, office-productivity, and other applications that companies already use. Wherever it makes sense, integrations should exchange data in both directions and allow the option of embedding agreement workflows in the applications that employees already use.

• **Extensions to the SofA platform.** These are prebuilt connections to specialist software vendors, which add extra functionality to the SofA platform—for example, e-vaulting for financial services, real estate forms specific to various local realtor associations, and identity-verification capabilities for specialized situations.

• **Custom connectivity.** To enable connectivity with proprietary applications, a rich, well-documented API is mandatory.

Reliability
Companies run on agreements, so it’s not an option for the SofA platform to be down for maintenance or unanticipated problems. And it’s not enough for a vendor to offer a Service Level Agreement (SLA) with high uptime if that vendor regularly fails to achieve the SLA. It’s worth understanding the actual track record of uptime over a period of years.

Security and Privacy
Agreements often contain sensitive customer and business-terms information. Thus, it is important to understand how far an SofA platform has gone to secure itself: Does it comply with privacy and security

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7 API is application programming interface. It is the specification for how one software system can be controlled by other software systems.
standards like ISO 27001\(^8\) and SSAE 18 (SOC 1 Type 2, SOC 2 Type 2),\(^9\) PCI,\(^10\) and HIPAA?\(^11\) Has it gone beyond the European Union’s GDPR?\(^12\) requirements to achieve EU-approved Binding Corporate Rules?\(^13\) How many large financial institutions use the platform?

**Deployment Flexibility**

Although most companies are buying new software as cloud-only, some industries require or prefer to keep sensitive customer data on-premise. Best case, an SofA platform allows the option of cloud, on-premise, or hybrid deployment.

**Adoption Flexibility**

Modernizing a System of Agreement has the potential to be a large project. A well-designed SofA platform allows incremental adoption—starting with quick, high-impact wins, which can then be built on.

**Customer Success Services**

Especially for larger organizations, modernizing a System of Agreement can involve significant complexity in planning and execution. Thus, it is important that an SofA platform vendor brings not just the technology but also the human expertise to drive success. Look for a services organization that goes beyond standard technical support and training to advisory capabilities in planning, architecting, and implementing the SofA platform and its connections to other components. These capabilities should range from technical expertise (for example, how to best use a particular API) to business and organizational guidance (for example, best practices for creating an internal Center of Excellence around your System of Agreement).

**Ease of Use**

Last but not least is another factor that, if weakly fulfilled, can drag down everything else: ease of use. Put simply, if an SofA platform is hard to use, it won’t get used. This applies to end users who sign agreements, employees who prepare and manage agreements, and developers who write software to connect to the SofA platform. Thus, it is important for an SofA platform to prove its usability via trial, letting the relevant constituents judge the experience for themselves. Also, where apps are involved, it is good to check ratings and download counts in app stores.

**The Signature Appliance Integrates with Your On-premises Systems**

The Signature Appliance is the most trusted, on-premises, embedded electronic signature solution to power approval and agreement processes behind your firewall. Built using TSCP Bridge X.509 PKI digital signature technology, the Digital Signature Appliance has key security certifications including FIPS 140-2 level 3 and Common Criteria EAL4+, Pre-built connectors for the leading ID management, document authoring, document management and workflow applications enable you to add digital signatures while preserving your existing business processes. Employees can authenticate with the Digital Signature Appliance and the time of signing and sign directly from these applications providing an easy and secure experience.

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\(^8\) ISO is the International Organization for Standardization.

\(^9\) SSAE (Statement on Standards for Attestation Engagements) 18 is an auditing standard for service organizations. SOC (Service Organization Control) 1 Type 2 and SOC 2 Type 2 are the relevant reporting requirements for cloud-software businesses.

\(^10\) Payment Card Industry (PCI) Data Security Standard is a security standard for safeguarding credit-card data.


\(^12\) The General Data Protection Regulation (GDPR) is a European Union regulation for personal data protection and privacy.

\(^13\) With Binding Corporate Rules (BCRs), the European Union reviews and certifies a company’s practices for handling transfers of personal data outside the European Union.
DocuSign Partners

DocuSign®
The Rise of Modern Systems of Agreement
Case Study: TSCP Member Partner Registration
Compliance with the DFARS 252.204-7012 & SP 800-171

Complexity of the Aerospace and Defense (A&D) supply chain compliance with the DFARS 252.204-7012 & SP 800-171 (Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations controls). Each Defense company has defined compliancy for NIST SP 800-171 compliancy but there is no unified approach amongst the primes and contractual flow down to their subcontractors.

Legacy Process:

In a global economy, some parts of the supply chain are outside the US. This makes it difficult to audit compliancy from the US. And to satisfy adherance to NIST 800-171 controls where CDI resides of supplier systems in NATO countries. Undefined requirements when information gets so diluted that it does not become CUI anymore. Multi venues of activities with no end state defined. The supply chain end-state solution needs to make progress towards helping secure the supply chain.

Salesforce & DocuSign Platform

By using Salesforce integrated with DocuSign, our Partner Registration has become more efficient and managing the supply chain compliancy and audits has become some much easier. We defined the DFARS 252.204-7012 & SP 800-17 requirements and mapped required documents and artifacts for compliancy. We set up and standardized the entire process and automated predefined audit templates. To onboard a supply chain partner, a Global Supply chain representative simply drags and drops tags and fields where partners provide input, attach evidence and sign (attest) of audit complicacy.

Today, we are confident that the right authorized people can sign and attest to requested information in the right order. Once the templates are setup, with a click of a button each supply chain partner receives the same audit package. Our partners can sign anytime, anywhere on any device. We can monitor the compliancy package at any time. Because DocuSign is integrated into Salesforce all the document metadata collected flows back into Salesforce automatically. We always have the most up to date and accurate data is always at our fingertips. Our Global Supply chain representatives can monitor the status of all Audit reports we are working on and know exactly what items have been completed and which items still require remediation. We can monitor anywhere with the confidence that the integrated workflow is always reliable and up to date.

Return on Investment

Using the modernized System of Agreement, Partner Registration went from several months completing required compliance documents. Global Supply chain representative time went from a several months of processing to a few weeks per new supply chain partner. Cost per new partner supply chain is calculated at 85%.

System / Application Interaction

TSCP PKI Bridge - Digital Signature Appliance, Salesforce, ID/Dataweb, Active Directory.
Case Study: TSCP Member Biopharmaceuticals
New Hire On-boarding

An excellent example of a company running a modern System of Agreement is a TSCP Member, a global biopharmaceutical company focused on serving patients and families affected by rare diseases through the discovery, development and commercialization of life-changing therapies.

Legacy Process:

In the past, Human Resources would perform a labor intensive and time consuming process that included the following; 1) send out new hire Candidate offer letters where Candidate would print out and sign, scan and would mail, email or fax offer letter back to HR; 2) HR Central would locate signed email offer letter would send out on-boarding packet i.e. I-9 Forms, Direct Deposit Forms, W-4 and State tax withholdings and assortment of internal company Privacy and Security documents etc. to new hire; 3) New hire would print forms, complete and sign paperwork and mail, scan, fax or email completed packet; 4) HR Central would locate paperwork, scan and key data into ServiceNow; 5) On new hire employee orientation day, HR Central would correct any errors or incomplete data missing in the packet and manually conduct in-person Identity vetting and proofing for page 2 of I-9 document; 6) HR Central would scan completed new employee orientation packet and manually forward each document to appropriate internal department and manually enter information into ServiceNow; and 7) HR Central would manually archive completed documents and print out a copy for new employee for their records.

System of Agreement platform

Using DocuSign as its System of Agreement platform, TSCP Member HR New Hire On-boarding is an automated easy and intuitive Template work-flow that automatically populate each document with data, then sends the agreement for signature, all directly from within the DocuSign application. The new employee enters their required information during the signing process, where subsequent documents data fields are auto-populated with entered information and the completed package is sent back to HR Central for processing. During this process, HR Central has complete visibility into the new hire entry process to either answer questions or advise on missing information.

Once the completed New Hire Candidate packet is completed is automatically upload into ServiceNow where an HR Central representative is assigned the case, reviews and completes the on-boarding process. Each document is routed to it's appropriate internal department through the Document Visibility feature to protect sensitive or employee PII information.

Return on Investment

Using the modernized System of Agreement, new hire experience went from several hours of completing paperwork to ~20 minutes. HR Central Representative time went from a full day of processing to ~90 minutes per new Candidate. Cost per new hire is calculated at 86% and used as cost mitigation for future head count resourcing.

System / Application Interaction

TSCP PKI Bridge - Digital Signature Appliance, ServiceNow, SalePoint, Active Directory.
Case Study: TSCP Member Aerospace & Defense Partner Registration

An excellent example of A&D and government agencies running a modern System of Agreement where TSCP Members have invested over $400M in internal federated systems using TSCP’s common operating rules and specifications. TSCP Members manage trust through a federated Trust Framework with all the agreed governance documents e.g. business, technical, legal, privacy that is scalable to the supply chain.

Problem: Legacy agreement processes are often manual and fragmented

Critical business processes are still manual, paper-based and disconnected, resulting in cumbersome, time-consuming transactions, reduced productivity, and rising costs. For each new Partner Registration process, numerous contributors create and review content in an almost entirely manual process of unpredictable duration. This process is repeated for each supply-chain company.

One of TSCP’s A&D member has a contract with over 300,000 supply chain partners. Onboarding can take up to two or three months before contractors can start working on the program because of the complexity of the onboarding compliancy to Federal/Defense Acquisition Regulations, security controls and authorized signatures. Agreements are different from normal documents because they often involve legal commitments and can be subject to regulatory rules about how they are signed and retained. These rules may differ by the type of agreement and by regional laws. Thus, agreements need specialized processes and systems. Ability to access and digitally sign and approve documents is key to mission success.

System of Agreement platform

Using DocuSign System of Agreement platform helped automate the core of doing business - the agreement process. By creating Partner Registration templates with process rules and conditional controls, each program can initiate registration with their partners, automating the data/artifact collection, signatures for legal commitments and FAR/DFAR attestations. Once data and documents have been completed, the System of Agreement platform triggers other processes to onboard subcontractors and manage – retain, retrieve and report on partner agreements for update compliancy.

Return on Investment

Implementing the System of Agreement process, Partner Registration process is expected to go from several months to weeks. Cost per Partner Registration onboarding is calculated at 80% and used as cost mitigation to offset overhead charges.

System / Application Interaction

TSCP PKI Bridge - Digital Signature Appliance, ServiceNow, SharePoint, MyID.
Case Study: TSCP Member Derived Credentials

An excellent example of A&D and government agencies running a modern System of Agreement where TSCP Members have invested over $400M in internal federated systems using TSCP's common operating rules and specifications. TSCP Members manage trust through a federated Trust Framework with all the agreed governance documents e.g. business, technical, legal, privacy that is scalable to the supply chain. The workplace is already mobile, tablets and/or smartphones provide access anywhere mobility increases user convenience, thus productivity.

**Problem: Legacy agreement processes are often manual and fragmented**

FIPS 201 / PIV/PIV-I was developed to provide secure credentials for logical and physical access to government resources. PIV/PIV-I has been issued to virtually all federal employees and contractors. At the time of its inception, PIV/PIV-I was meant to address workstation or desktop security. With the proliferation of mobile devices (phones and tablets), the workplace has become increasingly mobile. Using CAC, PIV, or PIV-I cards with mobile devices may be impractical and impact user experience. Enabling mobility while complying with Federal policy may introduce challenges as well as additional costs for deployment and compliance.

**System of Agreement platform**

Using DocuSign System of Agreement platform streamlines the issuance of derived credentials and accelerates the core of doing business. TSCP has created Derived Credential templates with strict adherence to TSCP Bridge Certificate Practice (CP) polices, process rules and conditional controls can seamlessly create derived credentials and bind it to a mobile device or create a Signing certificate on the Digital Signature Appliance.

The PIV/PIV-I subscriber initiates the process begins with existing CAC/PIV/PIV-I credential to authenticate the subscriber, additional information i.e. Human Identity Verification, Knowledge Based Authentication and Environment Verification can be collected to further associate the Subscriber a higher assurance of identity verification for Security and Audit controls. Once verification, acknowledgement and signatures have been completed, the System of Agreement platform triggers other processes i.e. MyID, Digital Signature Appliance (DSA) to create and bind the derived credential to the DSA or mobile devices. Final documents can be routed to departments requiring copies for audits and compliance. Final documents, certificate of completion, form data and history logs are retained to TSCP member repositories i.e. SharePoint, Box etc. and can be easily create reports, retrieved documents and artifacts.

**Return on Investment**

Implementing the System of Agreement Derived Subscriber Process, TSCP Member Subscriber registration process is calculated at 80% time and cost savings and used as cost mitigation to offset overhead charges.

**System / Application Interaction**

TSCP PKI Bridge - Digital Signature Appliance, ServiceNow, SharePoint, MyID, ID Dataweb.
Future Systems of Agreement: smart contracts, blockchains, AI

Because modern Systems of Agreement are part of the much larger trend of digitally transforming business processes end-to-end, it is especially important to consider a platform’s innovation readiness—that is, how will it allow companies to take advantage of new technologies as they emerge?

For example, agreements have evolved from paper to PDF documents. PDFs are digital, but they are like pictures of paper. Displayed on a phone, a normal-size PDF document’s text can shrink to being unreadable. Today’s end users expect more. They expect documents that automatically adjust their formatting for readability on devices ranging from desktop computers to smartphones. As agreements evolve in that direction, an SofA platform should handle that evolution seamlessly.

Similarly, if other systems will take action on an agreement’s content, it is important to extract the actionable parts. This includes not only the numbers and words on the page; it also includes higher-level concepts that may need to be inferred, such as types of contract clauses—each with their own business logic and workflows. This is one potential use of artificial-intelligence technologies in Systems of Agreement. We mention others below.

More generally, what if agreements go beyond documents to incorporating executable computer code? That is the vision for smart contracts, which can automatically execute agreement terms—for example, make a crop-insurance payout when the weather exceeds 85 degrees in April. In the smart-contract future, preparing an agreement will need authoring and testing tools suitable for code, not just prose. And enacting agreements has a new meaning when the action is executed by the agreement itself—entailing requirements for alerts, notifications, and validating sources of data. Today’s SofA platforms need to be architected for that future.

Similarly, emerging technologies like blockchains and AI will have places in the agreement process. For example:

- As the technology matures, blockchains will have a role to play in providing a secure record of an agreement’s existence and its relevant data, which a company’s partners can use. Blockchains may also enable new ways to manage identity. Finally, they can be infrastructures on which to run smart contracts.

- Artificial intelligence is already being used for smart search, extraction, and discovery—for example, find all agreements that involve the concept of privacy, without needing to know or specify all the possible keywords. Going forward, AI will be able to automatically classify agreements by risk level, redact sensitive information, and analyze and optimize agreement processes, among many other potential uses.

Given the inevitability of these and other technology developments, SofA platforms must be able to embed or connect to these capabilities. Otherwise, modern System of Agreements will themselves become legacy.

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*The Portable Document Format (PDF) is a file format developed in the 1990s to present documents independent of the underlying application or operating system.*
Benchmarking and best practices

Every company has a System of Agreement, but most have yet to be modernized. As a result, they—the systems and the companies—are unable to keep up with the speed of business in an accelerated world. Given the pervasiveness of agreements in business, companies that modernize now can realize substantial benefits in cost reduction and customer experience, as well as gain a competitive edge against slower movers.

To benchmark your System of Agreement against best practices, and to identify next steps in modernization, a three-minute interactive assessment tool is available.
About the authors

Scott Olrich  
Chief Strategy and Marketing Officer of DocuSign

Steve Krause  
SVP Strategy and Product Marketing of DocuSign

Geoffrey Moore  
Consultant, speaker and author, best known for his book Crossing the Chasm

Keith Ward  
CEO & President of TSCP

About the companies

DocuSign pioneered the development of e-signature technology, and today offers the world’s #1 e-signature solution as part of its broader System of Agreement Platform. Our cloud-based platform allows companies of all sizes and across all industries to modernize the entire agreement process—all the way from preparing agreements to signing, enacting, and managing them. As a result, today we enable more than 400,000 customers and hundreds of millions of users in over 180 countries worldwide to accelerate business and simplify life.

DocuSign, Inc.  
221 Main Street, Suite 1000  
San Francisco, CA 94015  
www.docusign.com

TSCP was established to provide a forum for companies to collaborate on issues of common interest in the identity and access management arena. TSCP has managed the efforts of worldwide stakeholders – from both industry and governments - addressing the full range of security issues within the collaboration. TSCP specializes in the development of IT roadmaps, identity management and information access, specifications, and federated common operating rules and trust frameworks. TSCP has a history of developing and testing vendor agnostic open specifications for secure collaboration in mission-critical, operational environments. TSCP has been a leader in the development and adoption of digital identity and access management governance.

TSCP specifications have enabled industry and governments to implement solutions for: 1) Secure information exchange; 2) Identity credentials/digital identities and attributes; 3) Federated identity; 4) Information assurance; 5) Data labeling and protection with ITAR/Export secure document sharing; and 6) Supply chain management. TSCP specifications are used successfully in operational environments to secure and manage access to information. TSCP has a history of providing a governance trust framework and identity federation services to organizations that require to issue or accept secure credentials for their applications. TSCP has hundreds of thousands of end users who conduct business transactions with their organizational credentials.

TSCP  
8000 Towers Crescent Drive, Suite 1350  
Vienna, VA 22182  
www.tscp.org
Technical Specifications

Applications and File Types
- Microsoft Word, Excel, PowerPoint and Outlook
- Microsoft SharePoint and InfoPath
- AutoCAD, Bentley MicroStation
- PDF, TIFF, XML, and many more

Document/Workflow Management Systems
- Microsoft SharePoint, K2 and Nintex
- OpenText, Oracle, Alfresco and Laserfiche
- Siemens Teamcenter, SAP, Adobe LiveCycle
- Agile Frameworks, Box, Google Drive, NextDocs
- Additional ECMS and industry-specific applications

Signature Features
- Standard digital signatures (TSCP Bridge)
- Easily verifiable Digital Signatures
- Proof of identity, intent and integrity
- Multiple signers per document
- Customizable signature block
- Unattended and batch signing
- Audit trail and secured time stamps

Authentication Methods
- User Name/ Password
- Single Sign On
- One-Time Password (OTP)
- Tokens (Smart Cards, USB-based security tokens)
- Biometric
- RADIUS or OATH-based authentication
- ID Databweb
- SAML 2.0

Certification Authority (CA)
- TSCP Bridge Cross Certification
- DocuSign DSA Internal (controlled-trust)
- Subordinate CA or External CA
- Signing Key and X.509 Certificate Management
- Key-Management; Private-key Operations
- SHA 256 Document Encryption
- Policy & Procedure Employee
- Provisioning/Revocation
- Certificate Revocation List, Time Stamp Authority

Supported APIs
- DocuSign DSA Signature API (SAPI) Web Services
- Ready (OASIS DSS,
  Adobe Roaming ID ASSP, and SPML)
- Microsoft CAPI and CAPI-NG PKCS#11
- JCA/JCE

User Directories
- Microsoft Active Directory
- LDAP-based Directories
- Active Directory Federation Services (ADFS)
- Directory Independent Installation

Security and Digital Standards
- NIST FIPS 140-2 level 3 validated appliance
- FIPS 186 and ETSI TS 101 733
- DoD JTC PUBLIC KEY INFRASTRUCTURE (PKI)
- Common Criteria EAL 4 + evaluation for SSCD
  (Secure Signature Creation Device) certification
- eSIGN, eIDAS, UETA, FDA 21 CFR Part 11
- TSCP Information Labeling Data Handling Specification

Additional Features
- High availability and load balancing
- Supports unlimited number of signers
- High performance signing

Physical Dimensions (DocuSign DSA)
- 1U Rack-Mountable - 18.9” x 22.0” x 1.8” / 47.9cm x 55.9cm x 4.5cm (28 lbs / 12.7 kg)
- 4U Rack-Mountable - 19.0” x 17.5” x 7.0” / 48.3cm x 44.5cm x 17.8cm (30 lbs / 13.6 kg)

Organization or Subordinate CA Cross Certification