

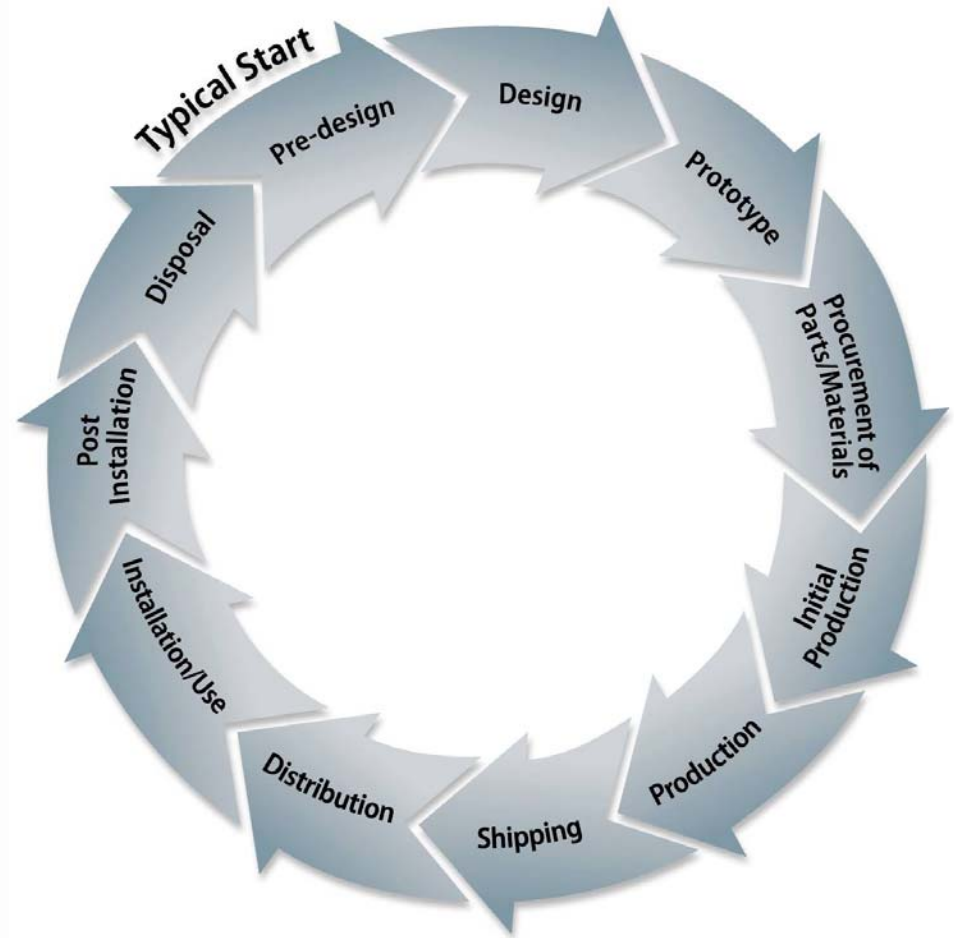
Supply Chain Issues: Automating the Material Composition Declaration Process

*Collecting, managing and
communicating IPC 1752 data*

Loni Kao Stark

Sr. Solutions Architect

Adobe Systems Incorporated



Agenda

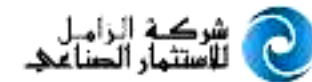
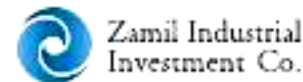
- Adobe customers
- Data and document management best practices
- Insights into IPC 1752 data collection, management, and communication optimizations
- Where to go from here



Our customers

- Enabled State of Illinois EPA to streamline reporting for wastewater treatment facilities
 - Reduce time and costs, increased accuracy of information
- Helped one of the world's leading aerospace companies streamline their procurement process
 - Move from manual paper-based procedures with a legacy ERP system to process that also improved corporate governance
- Worked with a leading medical technology company speed up FDA approvals of devices
 - Collaboration needed across extended teams and new compliance reporting rules with Sarbanes-Oxley

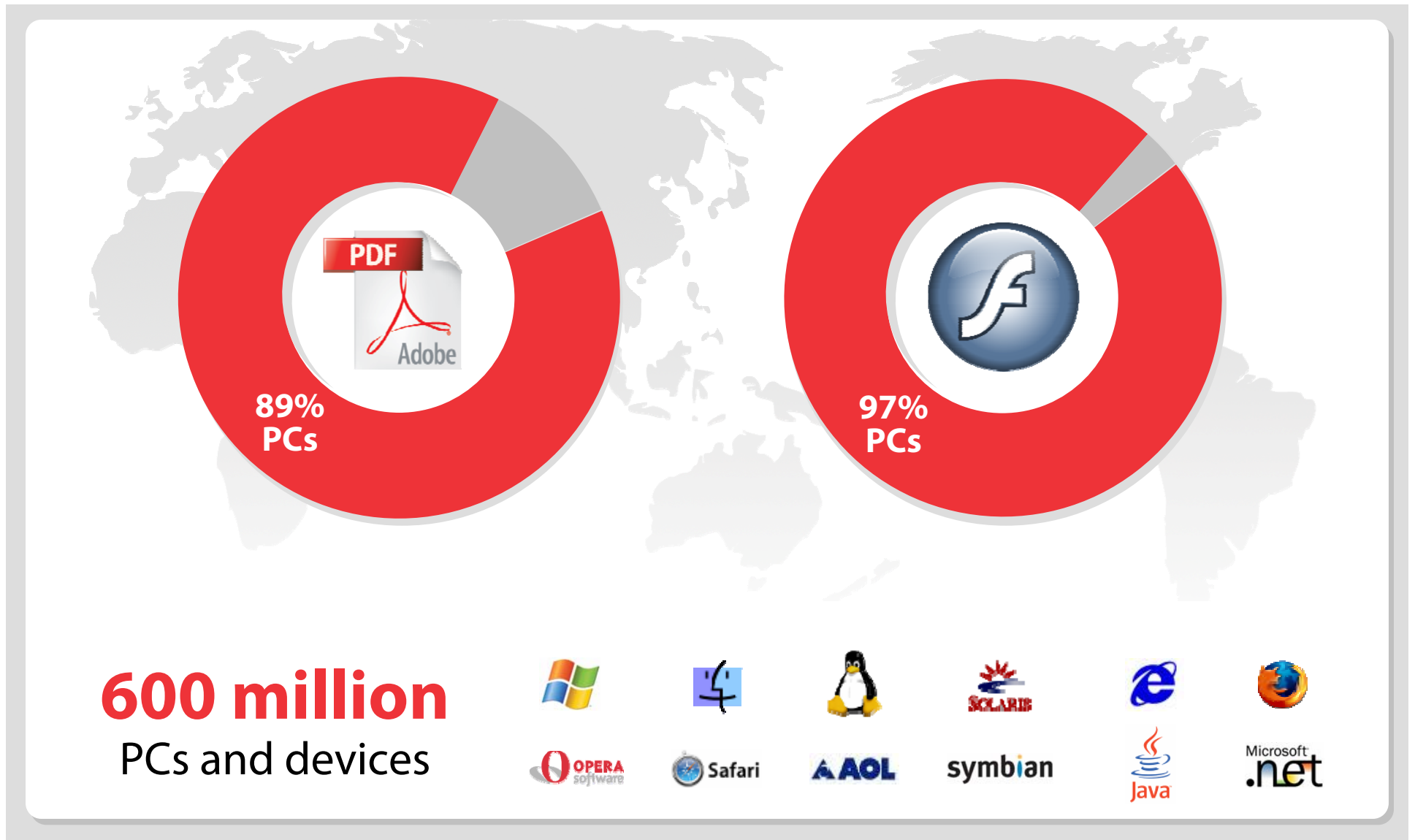
Adobe in Manufacturing



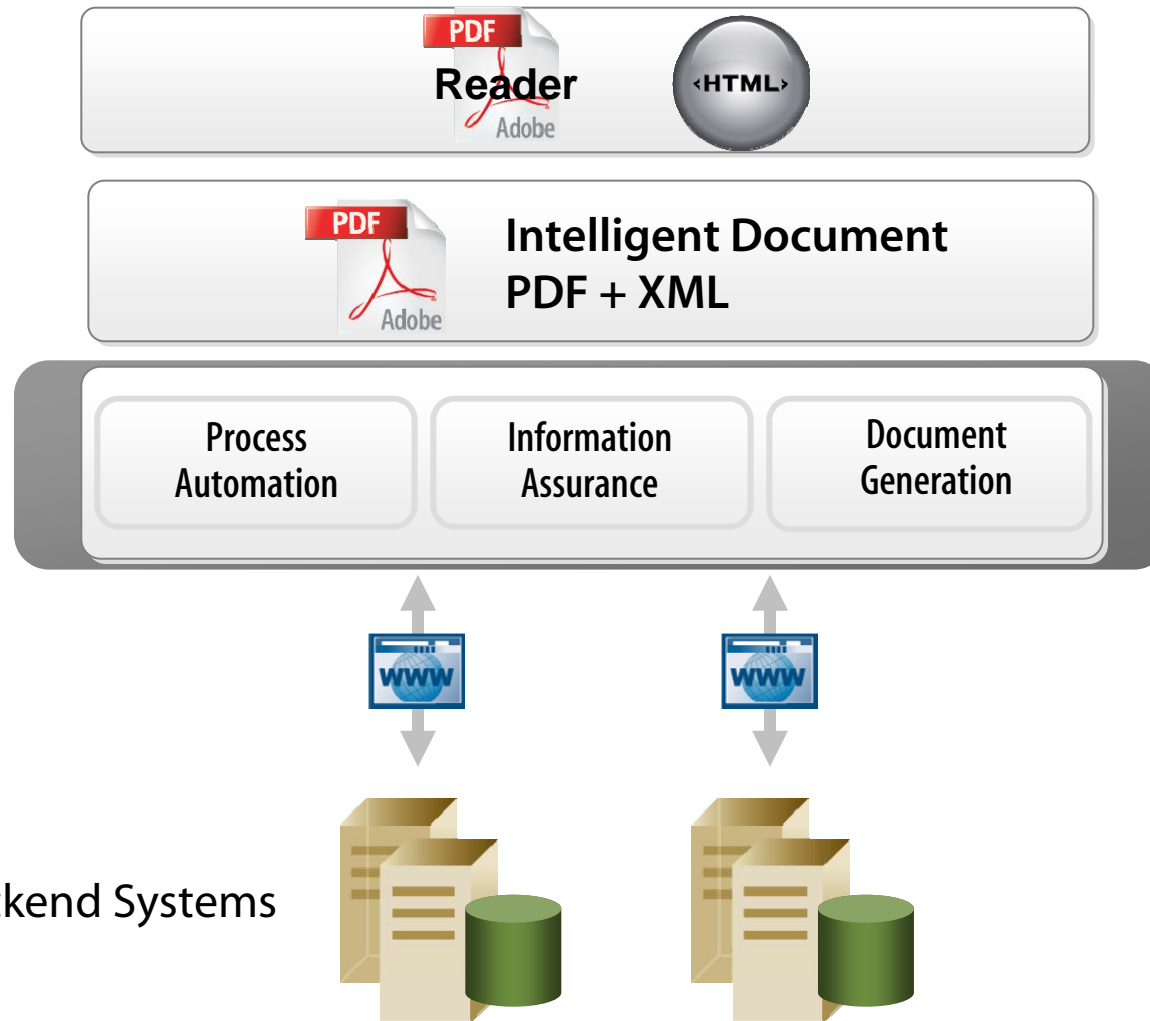
- > 2,400 government agencies
- 2 million PDF documents on .gov external Web sites
- Top PC manufacturers
- > 1,800 solution partners
- Results from benchmarks show
 - reduction in processing times of 50%
 - reduction in error rates of 90% and reduction in cost of distribution of 95%



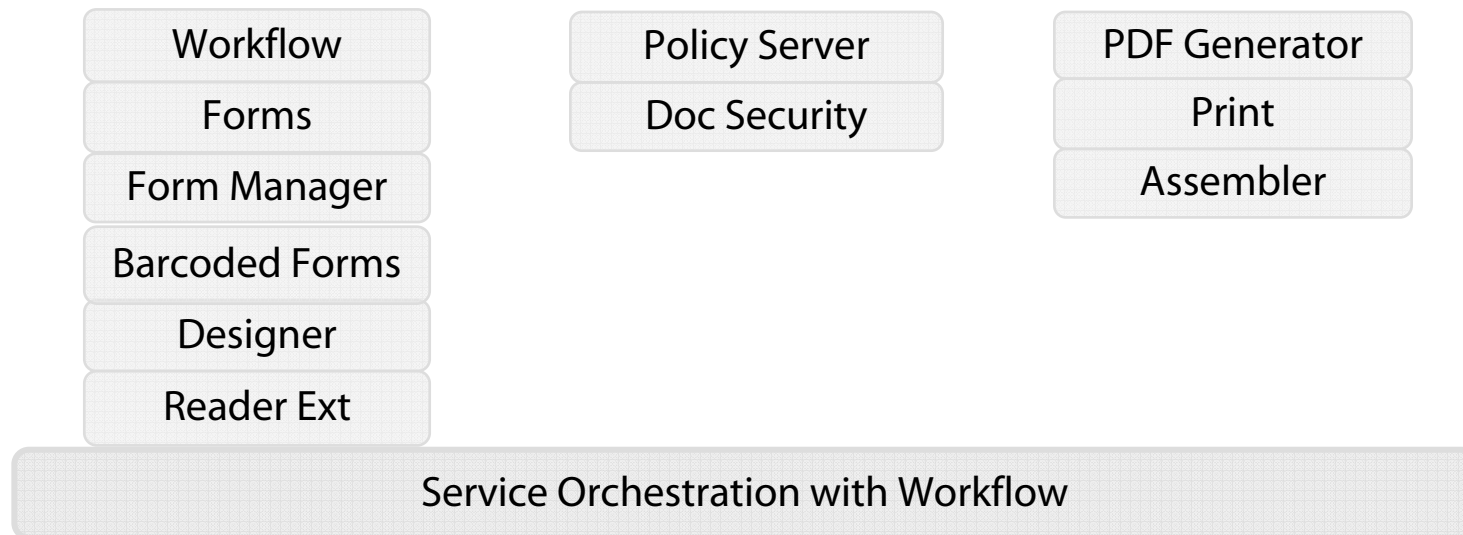
Widest Reach in the World



Process Management Services

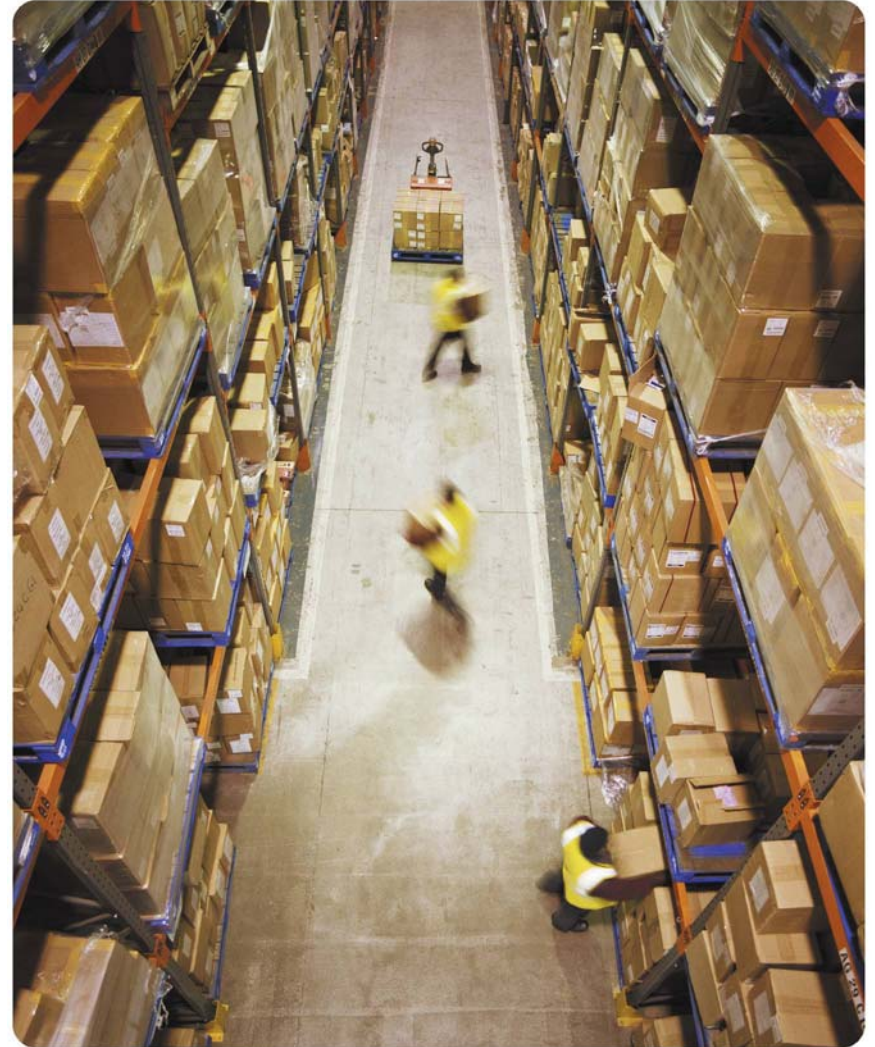


Adobe LiveCycle® Products



Best Practices in Data and Document Management

- Essential components to a complete solution around compliant data management
 - Collection
 - Management
 - Communication
- All of this needs to be done in an auditable, accountable manner



Compliance Reporting across the Supply Chain

DATA MANAGEMENT

- Archival of document of record
- Analyze data, exceptions across components
- Drive process improvement to other functions (eg. RFQs)
- Flexibility to changes in regulations
- Repurpose for different stakeholders



INFORMATION COMMUNICATION


Certification of communication documents

INFORMATION COLLECTION

- Widest reach across supply chain
- Standardized presentation and data
- Rules and Validation
- Privacy of information
- Auditable and accountable process
- Timely and efficient through automation

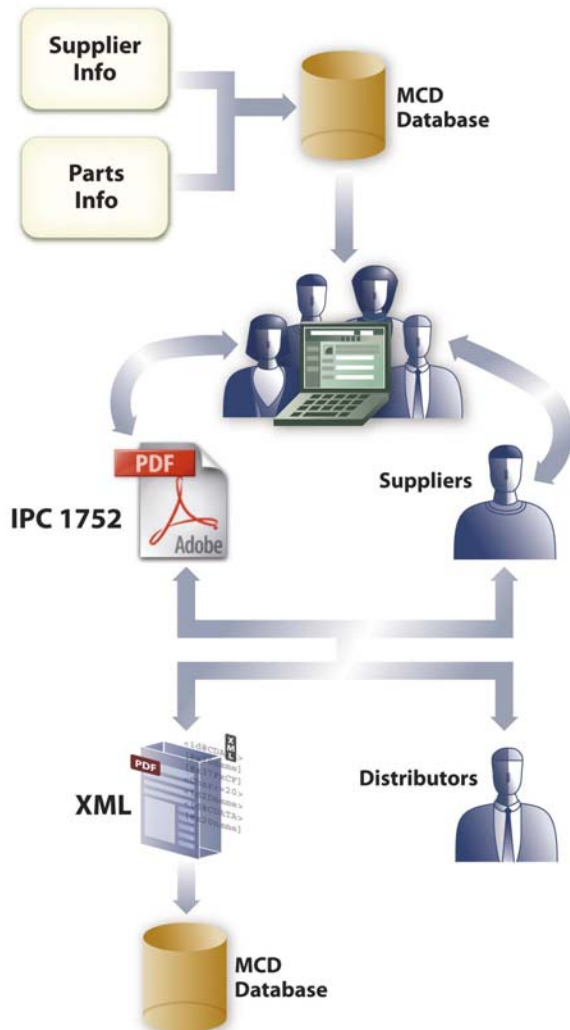
IPC 1752 Forms: The Value of IPC & Adobe

- IPC and Adobe partnered to provide a Adobe LiveCycle rights-enabled form
 - Same technologies as adopted by many government institutions including the IRS
- Doesn't require expensive IT investment
- Digitally/manually consumable by producers of sizes
- Stringent data population and collection capabilities via standards-based XML
- Viewable everywhere Adobe Reader® client "freely available forms"
- PDF can be used as a document of record

 Material Composition Declaration <small>© Copyright 2006, IPC, Bensenville, Illinois. All rights reserved under both International and Pan-American copyright conventions.</small>		<small>This document with lower level engineering re</small>	
<small>IPC-1752-2 v10</small>		<small>IPC Web Site for Information on IPC-1752 Standard http://www.ipc.org/IPC-175x </small>	
Requester Information			
Company Name *	Company Unique ID	Unique ID Authority	Re
Contact Name *	Contact Title	Contact Phone *	Co
My supplier ID		The File Type and Destination fields control how the form is submitted by the supplier. Consult your IT staff for configuration.	
Item Number *	Item Name	Mfr Item Number *	Mfr
Supplier Information			
Company Name *	Company Unique ID	Unique ID Authority	Re
Contact Name *	Title - Contact	Phone - Contact *	En
Authorized Representative *	Title - Representative	Phone - Representative *	En
Requester Item Number	Mfr Item Number	Mfr Item Name	En
Alternate Recommendation			
Manufacturing Process Information			
Terminal Plating/Grid Array Material		Terminal Base Alloy	J-STD-020 MSL Rating
Comments			

DRAFT * Required Field CAS Registry Number(R) is a Register

Information Collection and Communication across the Supply Chain



1. Parts and supplier information (ERP, PDM etc.) are aggregated in a Material Content Database (MCD)
2. Manufacturer reviews MCD and suppliers and parts with incomplete information are identified.
3. A blank/manually filled MCD 1752 form is emailed to supplier
4. Supplier completes information and digitally signs using the Adobe Reader and emails back. Data entered is validated as it is being entered.
5. Manufacturer exports MCD information from form as XML data that can be used to update the MCD. IPC form can be sent to distributors, customers.

Information Collection and Communication across the Supply Chain

The data can be exported to,
as well as imported from, XML.
(IPC 1752<-XML)

[illegible]

XML (PIP2A13)

Compliance Reporting across the Supply Chain

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INFORMATION COMMUNICATION

Certification of documents

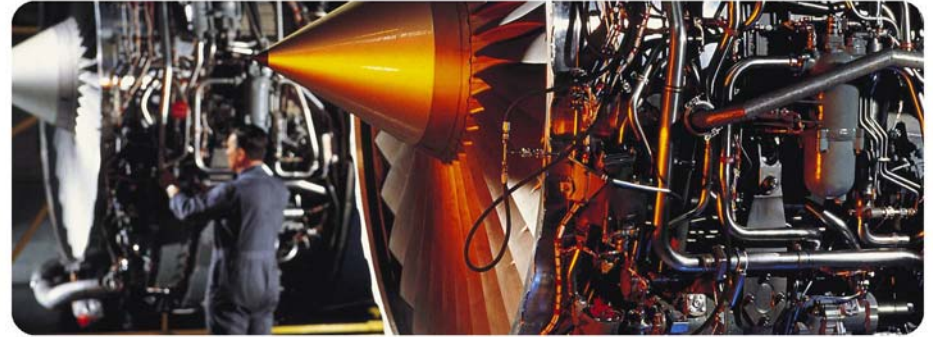
IPC 1752 : Great Beginnings

■ Benefits

- Ability to control the look and content of the forms: presentation & data
- Accountable: Ability to support digital signatures
- Tamper proof
- Data Validation within the form
- Wide reach with the Adobe Reader

■ Gaps

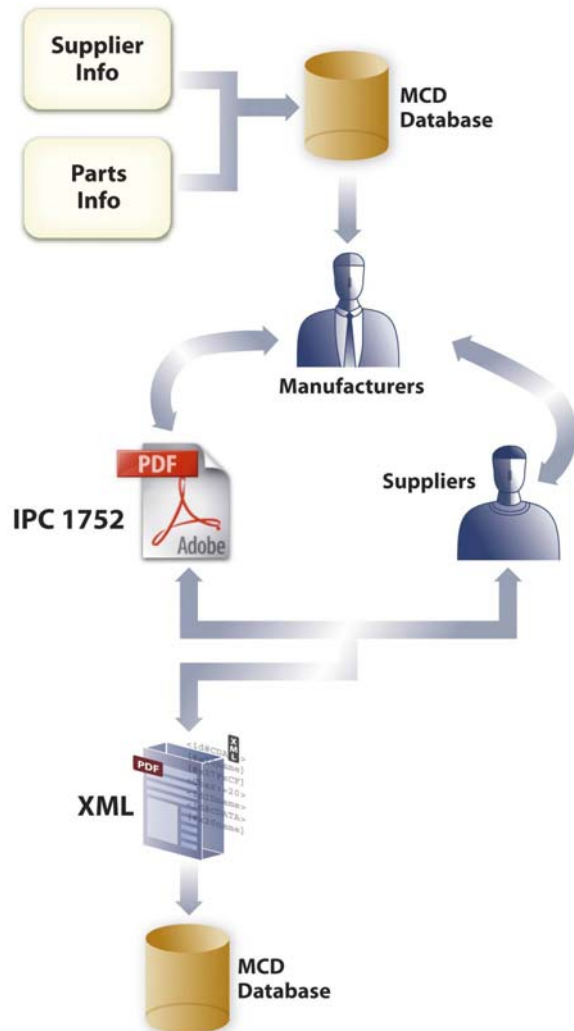
- Does not address Data Management component
- Privacy Issues
- More complex checking of data with company specific business rules is still manual
- Further automation can decrease cycle time



Communicating across the Supply Chain

IPC1752 and Beyond

INFORMATION COLLECTION



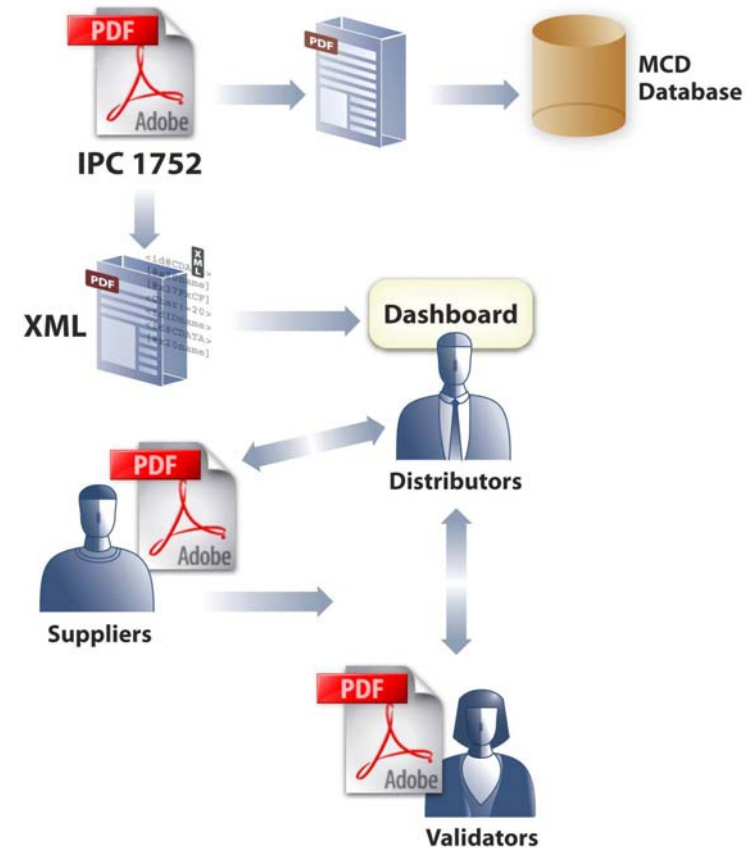
1. Parts and supplier information are aggregated in a Material Content Database (MCD)
2. Manufacturer reviews MCD and suppliers and parts with incomplete information are identified.
3. A pre-populated, DRM secured material content declaration request (IPC 1752) can be automatically generated, sent to supplier and tracked.
4. Supplier completes information using the Adobe Reader and emails or submits back. Data entered is validated as it is being entered.
5. System can extract XML data from response form, validate with business rules and send to backend systems.

Communicating across the Supply Chain

IPC1752 and Beyond

DATA MANAGEMENT

1. Workflow can ensure extracted XML data is sent to right back-end systems. Signed IPC 1752 PDF is archived in an MCD database or ECM system.
2. System to track supplier response, and send out reminders.
3. Dashboard of supplier response status can be automatically generated. Audit trail can be generated.
4. Supplier non-compliance can trigger automatic need for additional information
5. Aggregation of supporting documents into package
6. Validation by possible third-party on accuracy

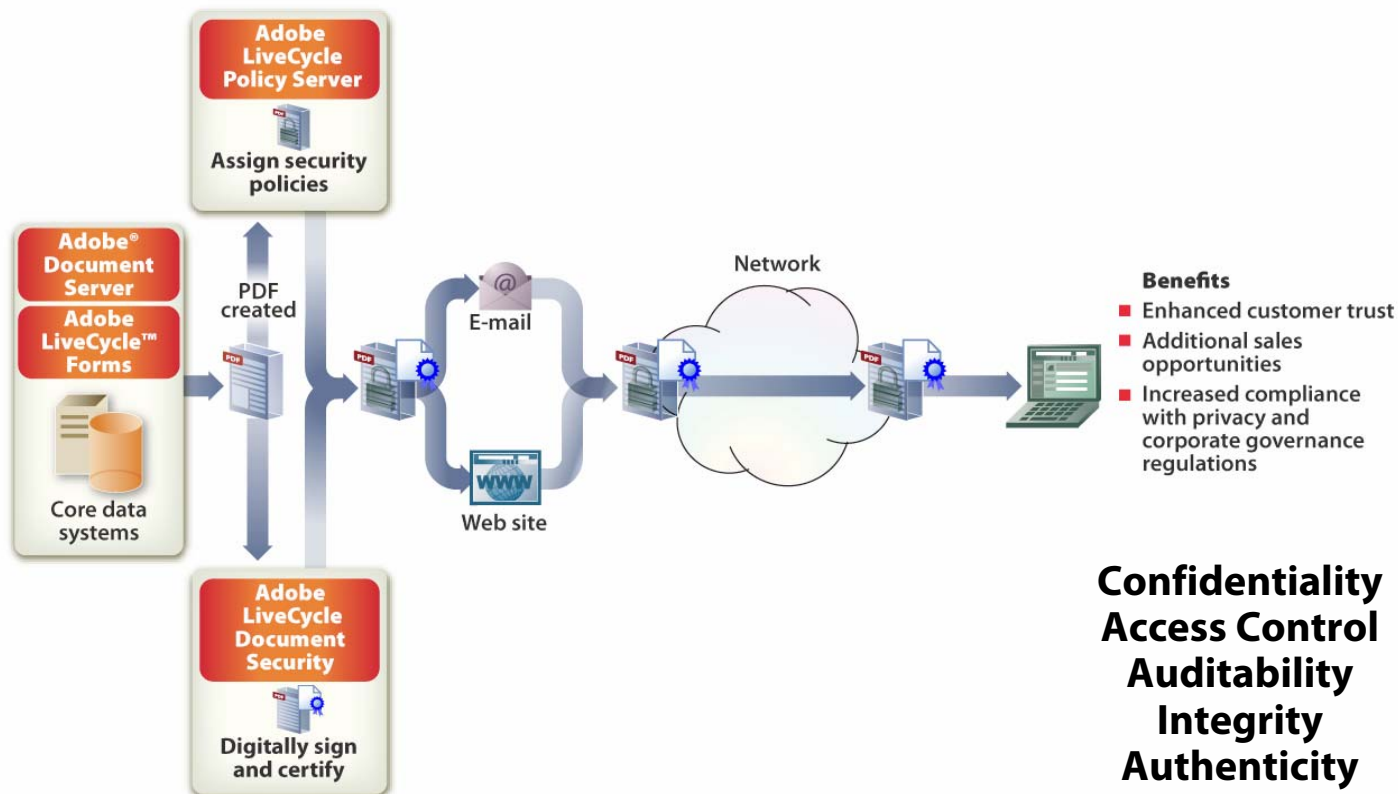


Communicating across the Supply Chain

IPC1752 and Beyond

COMMUNICATION

- Aggregation of supporting documents, audits and IPC 1752 into one PDF package for communication out to distributors, customers and government officials
- Application of certification to the issues MCD form to increase tamper-proof quality



Reactive to Proactive

- Prior to July 1, 2006, focus has been reactive: how do I ensure I am compliant?
- After July 1, the move is really from reactive to proactive
 - Minimize risk of non-compliance, product recall and inability to sell to certain markets
- Based on other industries, the opportunities are great in reducing compliance costs and using the infrastructure for compliance to also address best practices in other areas such as RFP, Work Instruction
- Those that are successful will turn this operational excellence into a competitive advantage



Conclusions

- IPC 1752 forms is just the starting point for opportunities in process improvement and costs reduction
- Adobe PDF and Reader environment provides a great platform to communicate better with suppliers, distributors and customers
- Adobe has decades of experience helping organizations manage and control compliance documents across multiple industries and can be a valuable partner in your next steps



Next Steps

- You can do your own development work by creating applications that work with PDF and XFA-based forms.
The PDF and XFA standards are publicly available.
 - The PDF specification reference is located at:
http://partners.adobe.com/public/developer/pdf/index_reference.html
 - The XFA specification is located at:
http://partners.adobe.com/public/developer/xml/index_arch.html
- Work with Adobe and its partners to explore how Adobe LiveCycle can help you automate, manage and control your compliance processes

Better by Adobe.™