



# Beyond the Page

**My story with PDF 2.0**

Duff Johnson



# Beyond the Page | My story with PDF 2.0

- Interoperability as a necessity
- Documents
- The ah-HA! moment
- End-user perspective
- Service-bureau perspective
- Software vendor perspective
- Creating a marketplace
- Standards development
- ISO 32000
- PDF 2.0
- What's different about PDF 2.0, and why the ownership thing matters
- What it's like at the standards table
- The next generation of PDF

# Background

Why is a political consultant working with electronic document standards?



# Interoperability from first principles



# Interoperability from first principles



**Trouble  
creator**

# Interoperability from first principles

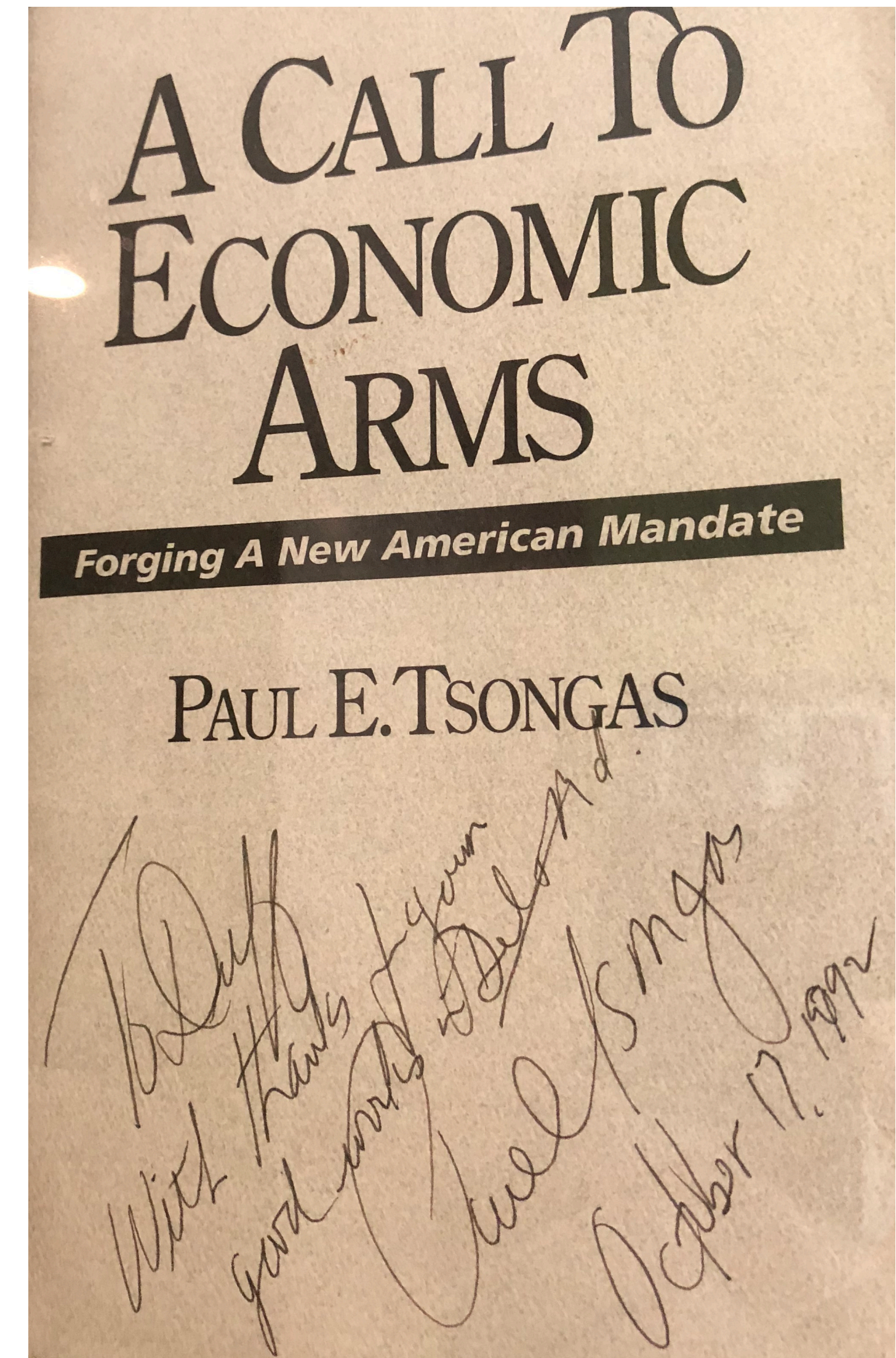


**Problem  
consumer**

**Problem  
creator**

# A political consultant? Really?

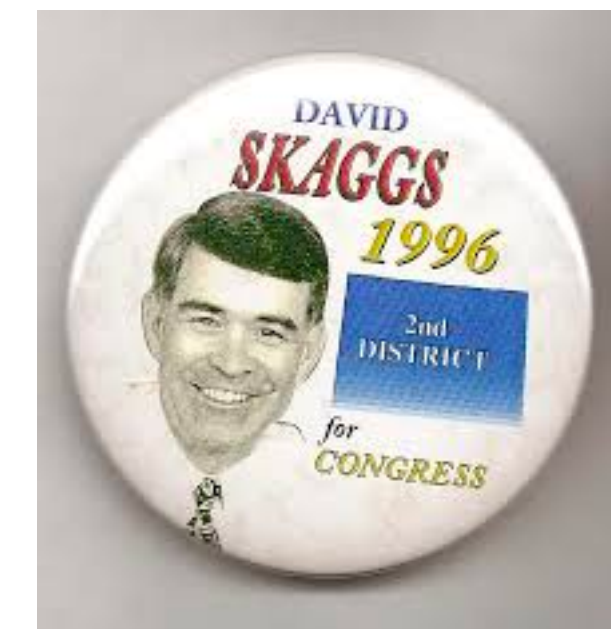
- Commercial fishing didn't work out for me
- In 1992 I started working for **Paul Tsongas for President**





# A political consultant? Really?

- Tsongas lost, so....
- ...naturally, I loved it, and worked on more campaigns!
- Colorado, Wisconsin, Virginia...
- Aruba, Antigua, Trinidad & Tobago...
- I got into **opposition research**
- I started to notice **documents**



DISTRICT 13 FOR MARSHALL AND  
EBERT, RACE IS ROUGH, COSTLY

# Documents

- Drafting / collaborating
- Recording
- Sharing (communicating)
- Authenticating
- Referencing
- Deciding



**Classic marketing imagery for “knowledge workers” - it’s all about documents**

Ah-HA!

# From politics to electronic document solutions

- Opposition research examines the record of candidates and opponents...
- Political researchers need effective means of analyzing collected documents...
- Campaigns need a means of packaging documents for efficient distribution...

*It's obvious... right!*

# From politics to electronic document solutions

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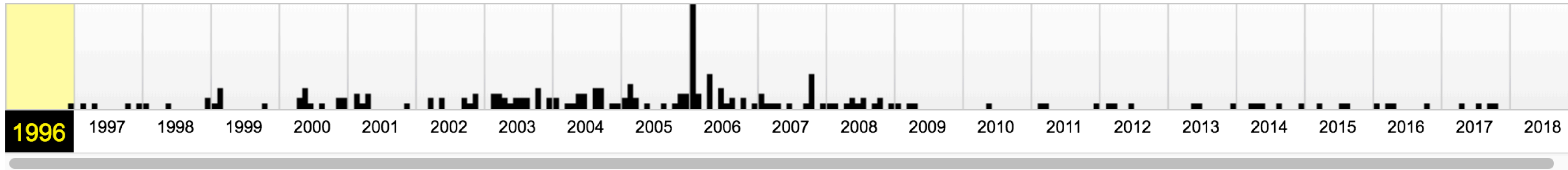
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http://document-solutions.com:80/


DONATE

Saved 202 times between December 27, 1996 and October 31, 2017.

[Summary of document-solutions.com](#) · [Site Map of document-solutions.com](#)



# Document Solutions, Inc. (1996 - 2008)



"Computers created the paper blizzard.  
It's time they cleaned up after themselves."

[Welcome Page](#) [Applications](#)


## WELCOME TO OUR WEB SITE

Our mission is the re-invention of information management.

We provide research, document management, electronic re-publication and communications tools.

**DSI** offers the very best in electronic document technology. We help our clients save **Time, Money and Worry.**


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CONTACT US | SITE MAP

Getting the most out of **PDF**

[Our Services](#) [The Difference](#) [Who Needs Us](#) [About Us](#)



**The PDF Service Bureau since 1996.**

From interactive DVD-ROM development to forms, JavaScript applications, accessibility and 508 compliance and publication-grade imaging, Document Solutions delivers electronic document solutions using **PDF** technology.



# San Francisco Chronicle

NORTHERN CALIFORNIA'S LARGEST NEWSPAPER

MONDAY, SEPTEMBER 9, 1996

**UNCONVENTIONAL TIDBITS:** Here's some interesting trivia from the recent political conventions that you can use at the next cocktail party, courtesy of the political research folks over at Document Solutions in Oakland.

First the Republicans:

■ Only one Republican uttered the words "**Newt Gingrich**" in a speech down in San Diego — California Treasurer **Matt Fong**.

■ "Abortion" got a total of two mentions.

■ "Tolerance" was used once — in the context of "zero tolerance for drugs."

■ "Contract with America" was not mentioned at all.

■ "**Ronald Reagan**" was invoked no fewer than 44 times.

As for the Democrats:

■ "Universal health care" was cited only once.

■ "Assault weapons ban" figured 24 times.

■ "Deficit," 67 times.

■ Balanced budget was cited only 9 times.

■ "Newt Gingrich," on the other hand, was invoked 105 times.

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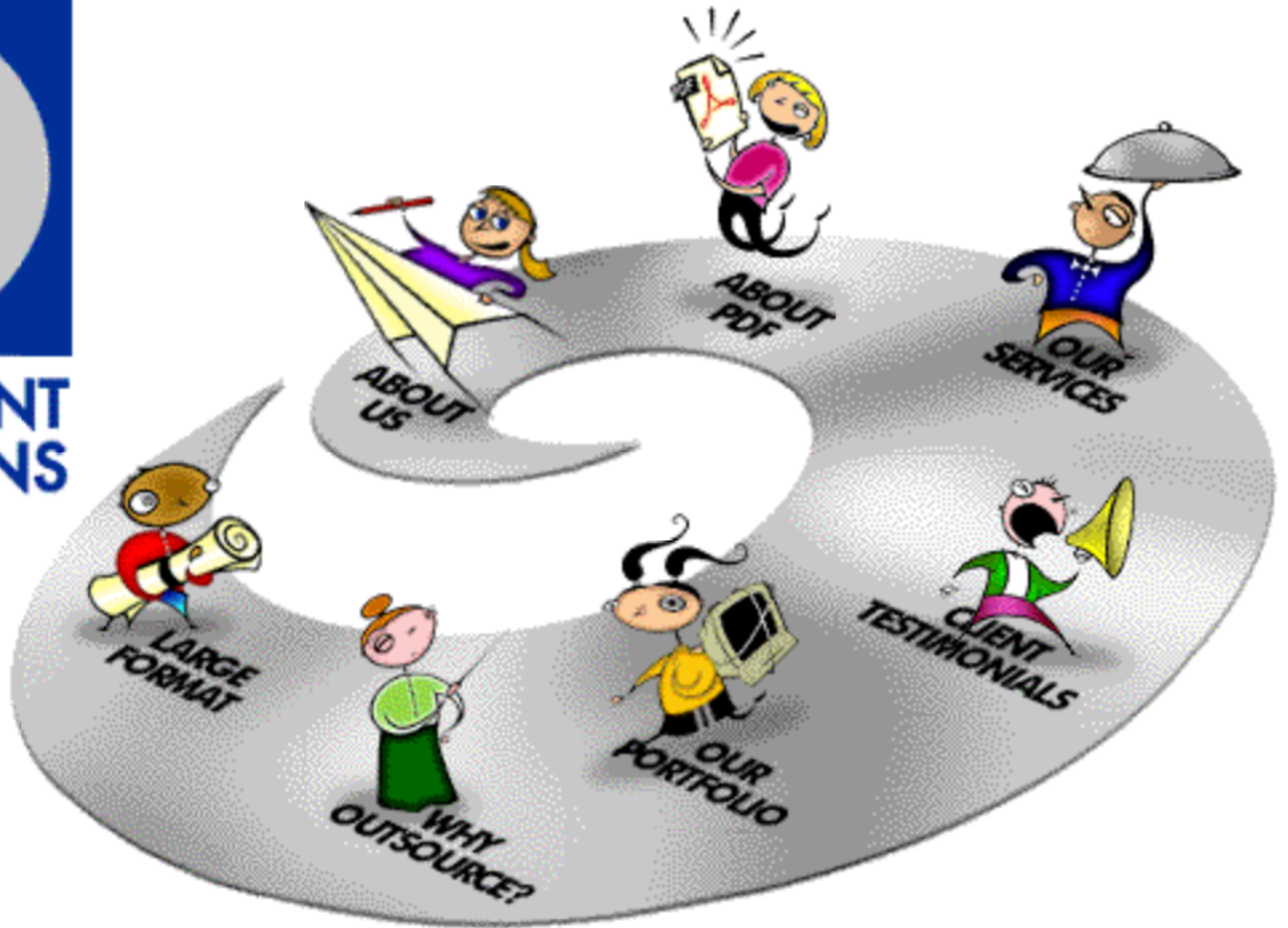
## MATIER & ROSS

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*Chronicle columnists Phillip Matier and Andrew Ross appear Monday, Wednesday and Friday. They can be heard on Monday and Wednesday at 6.50 a.m. with Frank Dill on KNBR-AM (680) radio. Their e-mail address is [MatierandRoss@sfgate.com](mailto:MatierandRoss@sfgate.com).*



**DOCUMENT  
SOLUTIONS**



# From 1996 - “Scanning to PDF”



The screenshot shows the Document Solutions website. At the top left is the logo for Document Solutions, consisting of a blue swirl icon and the text "DOCUMENT SOLUTIONS". To the right of the logo is the tagline "Getting the most out of PDF" in blue and red. In the top right corner, there are links for "CONTACT US" and "SITE MAP". Below the logo and tagline are four navigation links: "Our Services", "The Difference", "Who Needs Us", and "About Us". The main content area features a stack of various documents on the left, including a notebook, a newspaper page, a map, and a technical drawing. A red and white PDF icon is positioned at the bottom of the stack. To the right of the document stack is the heading "PDF Scanning Services: 'Publications Our Specialty'" in large blue font. Below the heading are three paragraphs of text describing the company's services and a partnership with Strategic Office Solutions.

CONTACT US | SITE MAP

DOCUMENT SOLUTIONS

Getting the most out of PDF

Our Services The Difference Who Needs Us About Us

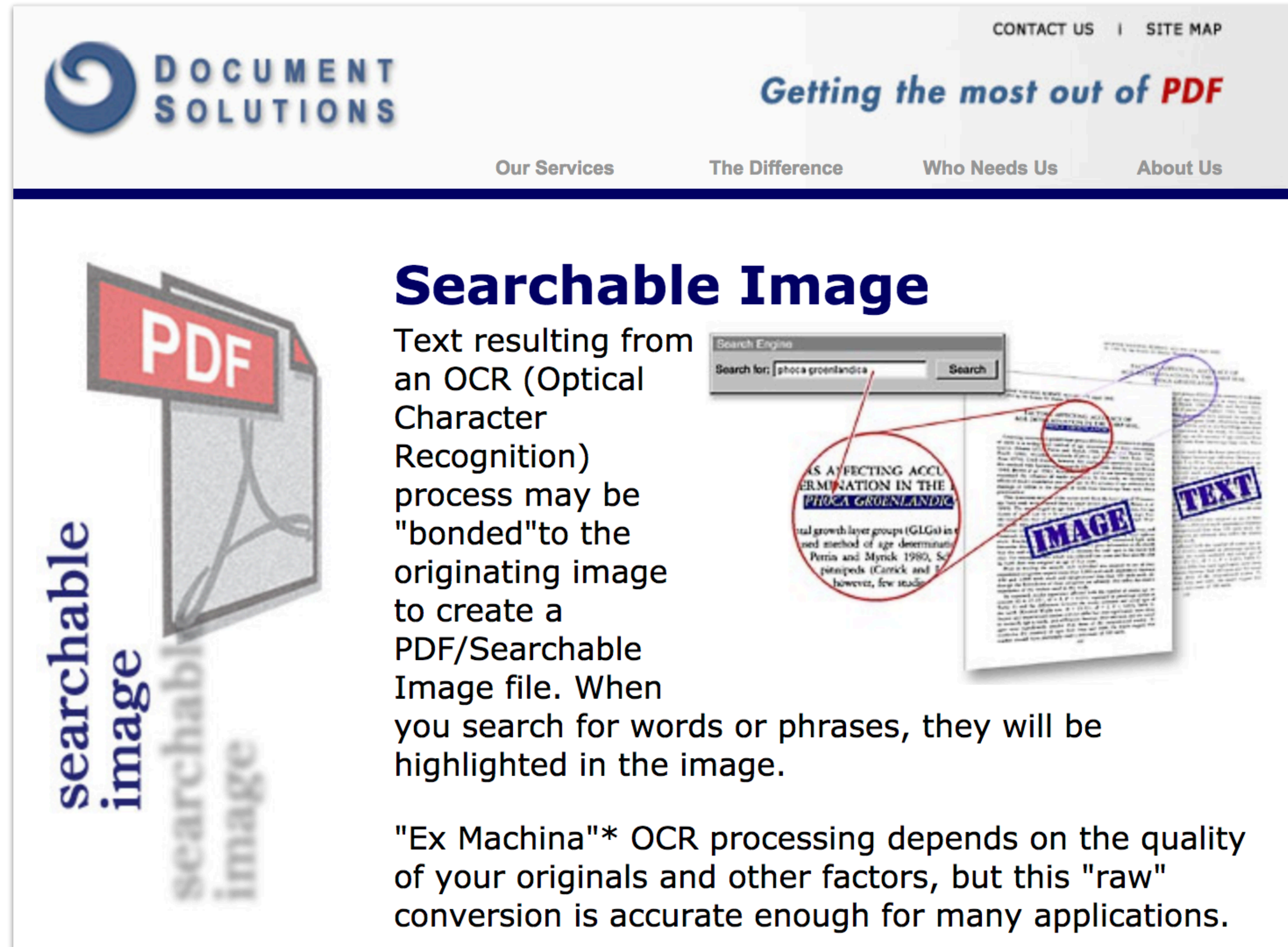
## PDF Scanning Services: "Publications Our Specialty"

Document Solutions provides state of the art publication-grade scanning services to magazine, newsletter, book and periodical publishers, printers, graphic designers, libraries, web site content managers, marketing departments, technical writers, government agencies and many others.

The common thread with all our scanning clients are ultra-strict quality requirements, advanced PDF conversion services and other special needs.

Through our new [partnership](#) with Strategic Office Solutions, DSI is able to offer our imaging services even more cost-effectively than ever before.

# “Searchable Image PDF”



**DOCUMENT SOLUTIONS**

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*Getting the most out of PDF*

Our Services | The Difference | Who Needs Us | About Us

## Searchable Image

Text resulting from an OCR (Optical Character Recognition) process may be "bonded" to the originating image to create a PDF/Searchable Image file. When you search for words or phrases, they will be highlighted in the image.

"Ex Machina"\* OCR processing depends on the quality of your originals and other factors, but this "raw" conversion is accurate enough for many applications.

# From 1997 - “MultiResolution PDF”

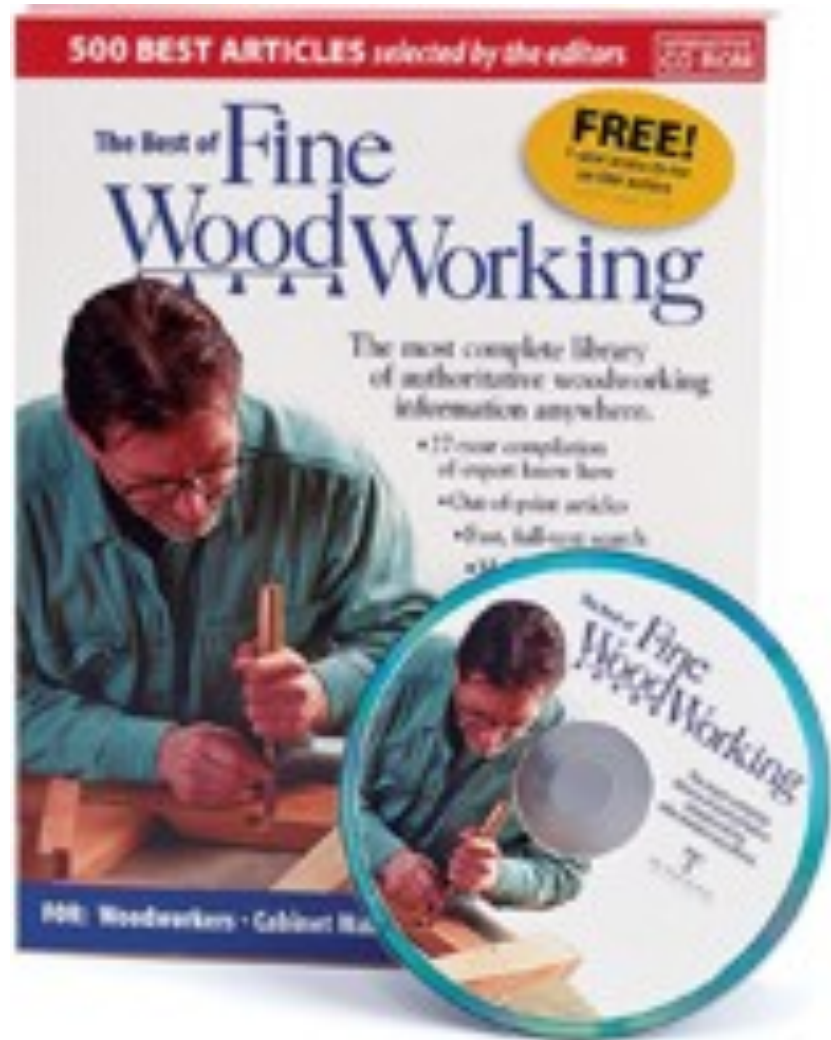


# Significant **imaging** projects

- Scientific journal back-catalogs
- Trade magazine back-catalogs
- Product manuals and documentation for manufacturers
- Historical collections
- United Nations Yearbooks, United Nations 'Law of the Sea', Scientific American, and many others



# From 1998 - disc-based collections



**JLCD-ROM**  
The Builders Encyclopedia™

HOME | SEARCH | RESULTS | EXIT

**JLCD-ROM VI**  
The Builder's Encyclopedia™

17 Years Of  
**THE JOURNAL OF LIGHT CONSTRUCTION**  
1986-2002  
For Windows and Macintosh

**THE JOURNAL OF LIGHT CONSTRUCTION**  
DISK ONE: 1995 - 2002

- ▶ **SEARCH ARTICLES**
- ▶ **BROWSE BY ISSUE**
- ▶ **BROWSE BY TOPIC**
- ▶ **HELP**

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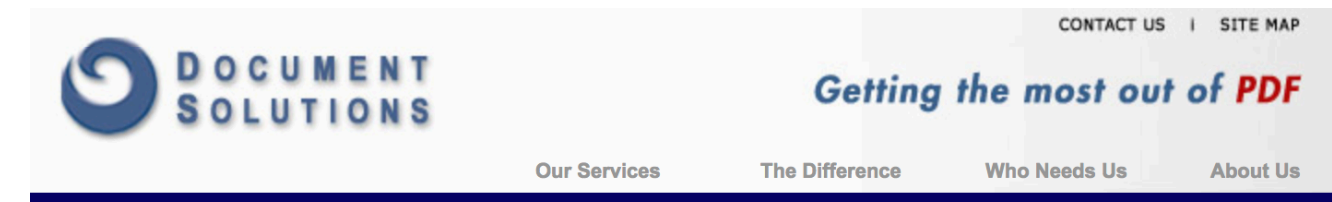
Weather Shield  
Windows & Doors

Uponor  
WIRSBO

Wood in its Prime



# Writing about PDF



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Getting the most out of PDF  
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Our Services The Difference Who Needs Us About Us

## PDF Online 101 - A Crash Course

The following guidelines for PDF authoring may not help you entirely avoid any problems, but the vast majority of your users and readers will be thankful nonetheless. Take good care of your PDFs when you make them, and everyone who ever uses the file will thank you for your consideration.

## What is Tagged PDF?

PDF files can contain many things. At a minimum, a PDF contains the text, graphics, bookmarks, links and other elements of content that go to make up an electronic document.



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## Section 508 Policies for PDF content

It's not obvious how Section 508 applies to PDF content. What is for sure is that perceived accessibility and usability depend on making the document work well rather than work poorly, no matter how formally "compliant" it is. Here, we offer a few issues worthy of consideration when developing your Section 508 implementation policy.



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Planet PDF classic  
the home of the PDF community  
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## REVIEW -- Adobe Acrobat 5.0: "Focus on the Document"

### 'The new 1.4 specification begins the long, slow transition to the complete XML enabling of PDF'

2 May 2001

By [Duff Johnson](#), Planet PDF Contributing Editor and [Susan Frank](#)

Talking PDF

Each PDF Page is a Painting



Planet PDF  
Planet PDF is brought to you by Debenu  
Enterprise & Government Creative & Print Develop

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## Duff Johnson: First Impressions of Acrobat 7.0

By [Dan Shea](#)



Planet PDF  
Planet PDF is brought to you by Debenu  
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## PDF is green tech for your office

By [Duff Johnson](#)

## PDF on the iPhone: The first swipe

By [Duff Johnson](#)

[G+](#)

*Duff Johnson is the CEO of [Appligent Document Solutions](#)*

As the iPhone continues to grow in popularity, business applications for the iPhone OS are proliferating. Inevitably, a number of these applications focus on electronic documents, which is another way of saying (whether their developers recognize it or not) that they focus on PDF files.

**ABOUT THE AUTHOR**

**Duff Johnson**

Since 2011, Duff has worked in the ECM industry specializing in PDF technology since 1995. An industry leader. Duff co-chairs the international that manages ISO 3200 specification for the PDI product... [More](#)



# Document Solutions, Inc. - **service bureau** perspective

- 1996 ~ The political research services idea was terrible...
- 1997 ~ ...but services for electronic documents made sense!
- 1998 ~ Added PDF forms services
- 2000 ~ Added Tagged PDF services
- 2002 ~ Completed transition from volume imaging to PDF technology services
- 2007 ~ One more massive imaging project...

# Service bureau perspective - lessons learned

- People really trust PDF
- Interoperability matters because stuff happens
- PDF matters because rendering matters
- Markup-language content is existentially distinct from documents
- PDF is almost perfect

# Service bureau perspective - lessons learned

- OK, PDF isn't perfect, but it's not so badly broken that it can't live forever

# Service bureau perspective - lessons learned

- OK, PDF isn't perfect, but it's not so badly broken that it can't live forever
- If we don't screw it up

# Software vendor

# Now sign this NDA...

- 2009 - 2011 CEO of Appligent Document Solutions
- 2011 - 2013 President of NetCentric Technologies US



# software vendor, lessons learned

- Software is hard
- PDF is really hard
- Software evolves, but documents are forever
- If you want to ship new features, you have to control support costs
- In documents, from paper size to PDF specification, standards enable business



# Standards

- **2000** started experimenting with tagged PDF (beta program for Acrobat 5)
- **2001**, started offering “Section 508 compliance” services for PDF documents
- **2004**, became chair of AIIM’s committee to develop a best-practice guide for PDF accessibility, the project which became PDF/UA
- **2008**, present at the birth of ISO 32000-1
- **2011**, elected ISO Project Leader for ISO 32000
- **2012**, published ISO 14289-1 (PDF/UA-1)
- **2017**, published ISO 32000-2 (PDF 2.0)

# Standards

- It only works if there's community participation

# Facts about PDF 2.0

- A community product
- Most significant feature: enhanced documentation
- Improves interoperability
- Reduces development and support costs
- Set out specific expectations for processing software
- Enhances PDF as a platform for business applications development

# Five key features of next-generation PDF

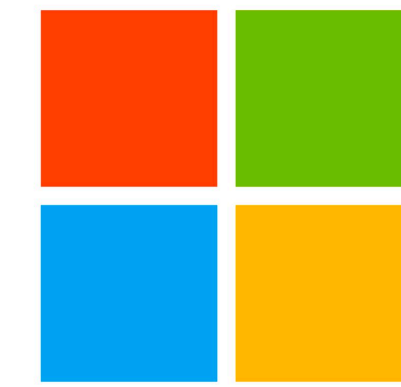
Feature	Value
<b>Ever-better interoperability</b>	Reduced development and support costs Enhanced platform for new features
<b>Transparency</b>	A basis for future investment
<b>Associated files</b>	Deep and rich content capture
<b>Document semantics</b>	Rich options for content reuse
<b>Authentication and encryption</b>	Trust and privacy

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**Technology-neutral**

# Counter-currents

The Google logo, featuring the word "Google" in its characteristic multi-colored font: blue 'G', red 'o', yellow 'o', blue 'g', green 'l', and red 'e'.

Microsoft

# PWP?

## Web Publications for the Open Web Platform: Vision And Technical Challenges



W3C Interest Group Note 02 May 2017

**This version:**

<https://www.w3.org/TR/2017/NOTE-pwp-20170502/>

**Latest published version:**

<https://www.w3.org/TR/pwp/>

**Latest editor's draft:**

<https://w3c.github.io/dpub-pwp/>

**Previous version:**

<https://www.w3.org/TR/2017/WD-pwp-20170309/>

# Web Publications for the Open Web Platform: Vision And Technical Challenges



“A book is a discrete collection of text (and other media), that is designed by an author(s) as an internally complete representation of an idea, or set of ideas; emotion or set of emotions; and transmitted to readers in various formats.”

“Books can learn from the Web how to be bounded, but open. The Web can learn from books how to be open, but bounded.”

Abstract

Hugh McGuire, Medium, April 2016

<https://www.w3.org/TR/pwp/#package>



# Web Publications for the Open Web Platform: Vision And Technical Challenges



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*Is it easier?  
Is it as capable?  
Is it as flexible?  
Is it as interoperable?*

# Web Publications for the Open Web Platform: Vision And Technical Challenges



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**Is it easier?  
Is it as capable?  
Is it as flexible?  
Is it as interoperable?  
...as PDF?**

# Counter-counter-currents

- HTML is an experience, not a document
- The biggest platforms aren't even using HTML anymore: Amazon, Facebook, Google and many other “web sites” are simply scripts with backend databases
- The idea of and need for documents persists; it's the new stuff that ephemeral
- How do people ‘document’ the web? Screen-captures.



# “Bounded but open” - and already accepted

## PDFpackage – a lightweight content management platform

In a recent article I discussed **using PDF as a container** to organize, transport and archive collections of content. Since then I’ve had numerous discussions about this idea with members of the PDF technology and related communities. This article is an attempt to consolidate the substantial (and notably favorable) feedback. Written to stand alone, this article necessarily repeats several aspects of the **previous article**.

### The basic facts

No-one owns PDF, but it’s accepted worldwide as the dominant end-state electronic document format.

The format includes rich capabilities in an ISO-standardized, vendor-independent specification.



# PDFpackage - background



## PDF Package

The “PDF Package” from a 2008 [post](#) in Adobe’s [Acrobat for Legal Professionals](#) blog.

- XMP metadata; onboard XML that may be associated with any PDF document, page, object or semantic structure element.
- ‘Embedded file streams’ and ‘associated files’ allow containment and characterization of arbitrary content (i.e., as is commonly found in email attachments)
- Rich interactive features to facilitate navigation, markup, annotations, JavaScript; and embedded content such as movies, 3D objects and MathML.
- Files generated from structured content are readily created with built-in navigation and accessibility
- Page-content may be reliably redacted to remove sensitive and / or GDPR-restricted content
- PDF files from “analog” workflows (e.g. scanned or faxed pages) are readily intermixed with PDF pages from other sources
- Encryption capabilities enabling new workflows
- Digital signature capabilities for tamper-proofing, authentication and more
- Facilitates rich experiences such as reflow and access to live data more commonly associated with HTML-based technologies

# PDFpackage: PDF beyond electronic paper

- A standardized, vendor-neutral approach to retaining and future-proofing end-state user content such as email and case files
- A lightweight records and content-management technology platform enabling vertical solutions across every business sector
- A way to share rich, dynamic content experiences without giving up (or while leveraging) PDF's fundamental features
- A roadmap for affirmatively managing electronic content for authentication, long-term retention and security (inc. GDPR) purposes

# PDFpackage: getting there

- Support PDF 2.0, especially PDFpackage-related features
- Develop industry-supported PDFpackage profiles describing appropriate usage in generalized applications (email archiving, case-folder management, etc.)
  - ZUGFeRD is an excellent example of a prototypical PDFpackage profile
- Stand back, and let the customer apply the content provisions or business rules they want

# Communications technology over time

- Language | 100,000 – 200,000 BCE
- Painting | ~40,000 BCE
- Writing | ~3000 BCE
- Paper | ~200 BCE
- Printing press | 1440 CE
- Portable Document Format | 1993 CE



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- Printing press | 1440 CE
- Portable Document Format | 1993 CE
- **Up to you**

It's a privilege to serve this industry

Thank you