

Software Applications of XML and PDF

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Presentation Objectives

- Understand strengths and weaknesses of XML and PDF technologies
- Evaluate upcoming changes to XML and PDF technologies
- See how XML and PDF automate tax administration in practice
- Gain perspective from software development community



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Why XML and PDF?

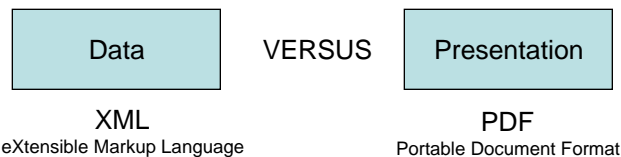
- Enabling technologies to improve business processes
- Support information sharing at various levels
- Internet has advanced both technologies
- Increase tax administration productivity



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What are XML and PDF?

Simple Answer



- Caveats
 - XML has related display technologies
 - HTML, Stylesheets, XSL
 - PDF has related data technologies
 - Fill-in forms, FDF, XFDF



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What is meant by XML?

- XML can have several meanings
 - “Pointy brackets” or tags
 - Narrow, markup language context

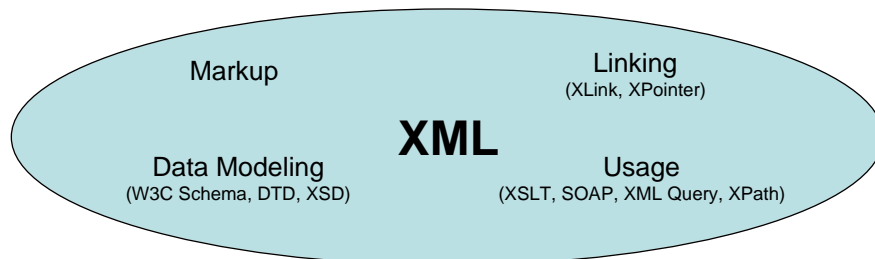
```
<IRS1120>
  <DateIncorporated>7/15/1999</DateIncorporated>
  <TotalAssets>385000</TotalAssets>
  ....
</IRS1120>
```



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What is meant by XML?

- XML Secondary Meaning
 - The “everything” technology
 - Everything needed to deliver web services and share information between applications



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What is meant by XML?

- XML Third Meaning
 - A data vocabulary
 - A set of tags and data models
 - A set of nouns and relationships
 - Some consensus derived business rules



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XML Strengths and Weaknesses

- Strengths
 - Simplifies data integration
 - Provides easy analysis of underlying data
 - Becoming mainstream technology
 - Developer support
 - Easy to use with Internet technologies
- Weaknesses
 - Does not present well
 - WYSIOTS (what you see is representative of the structure)
 - Some cursory standards evolving



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What is changing with XML?

- XML standard is pretty well established by open standards body
 - <http://www.w3c.org>
- Tools are evolving
- Cursory standards are evolving
 - SOAP for packaging multiple documents
 - XML Encryption
 - XML Signatures



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What is meant by PDF?

- PDF can have multiple meanings
 - A portable document
 - Viewable on PC, Palm, Mac, etc.
 - A printers proof
 - What you see is what you get
 - Sir Speedy, Kinkos print from high quality PDF
 - A paperless or e-document alternative
 - Ubiquitous format for Internet
 - Acrobat Reader is a free download



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What is meant by PDF?

- PDF Forms
 - Fill-in forms simplify data entry
 - Overlay base document to keep formatting
 - Support well defined fields, formatting, calculations, and more
 - Can support saving of data to Internet server



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PDF Strengths and Weaknesses

- Strengths
 - Superior presentation
 - WYSIWYG
 - Replacement for paper
 - Easily generated from all standard applications today
 - Built-in support for security, digital signatures, etc.
- Weaknesses
 - Data is not necessarily available for analysis
 - File sizes can be large, especially with graphics or scans



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What is changing with PDF?

- PDF remains a proprietary standard of Adobe Corporation
- Little has changed to the base standard in 5+ years
- FDF Toolkit continues to proliferate
 - <http://partners.adobe.com/asn/developer/sdks.html>
- Server-side libraries gaining momentum
- New XFDF extension provides bridging alternative between PDF forms and XML



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Applying the technologies

- XML and PDF accomplish information sharing
- XML and PDF are enabling technologies to improve business process
- Some examples...



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Corporate Tax Department Needs

- 2001 ACT Member Survey
 - <http://www.taxact.org/survey2001.pdf>
 - Conducted by Association for Computers & Taxation (<http://www.taxact.org>)
 - Survey its members to learn about current trends in tax automation



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2001 ACT Member Survey Results

- Tax Departments Need:
 - “Better query tools”
 - “Better integration”
 - “Built-in bridge to ERP”
 - “Custom reports”
 - Other tax system improvements
- Applying XML helps address many of these survey concerns

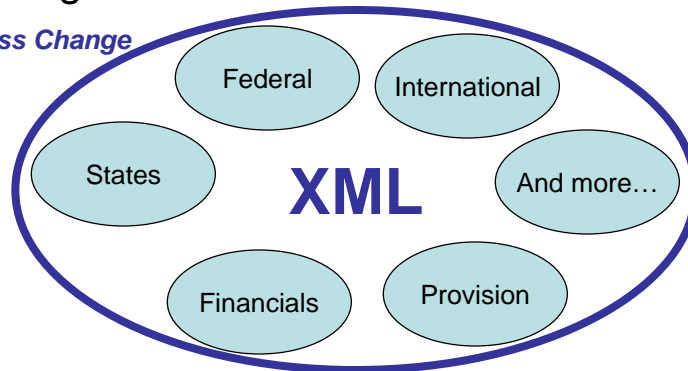


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XML In Action

- XML provides “best-of-breed” product integration:

Process Change



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XML In Action

- Improved Warehousing and analysis
 - XML infrastructure products simplify analysis against XML streams
 - Standards initiatives provide common data dictionaries and platform
 - XBRL (<http://www.xbrl.org>)
 - TaxML



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XML In Action

- Electronic Filing Automation
 - IRS defining standard for corporations to file tax returns electronically using XML in 2004

Process Change

- Simplified warehousing and retention



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PDF In Action

- Quick fill-in forms on web
 - Simplify tax department obtaining forms
 - Easy typewriter for one-off forms
- Review and sign-off
 - Read only PDFs distributed electronically for review and signoff



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PDF In Action

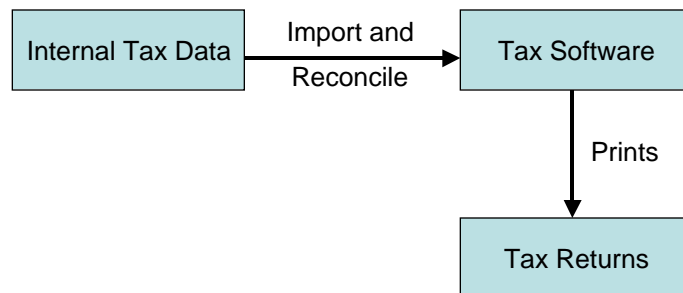
- Form Automation
 - Map data from database, spreadsheets or data warehouses to forms with little effort
 - Changes the way high-volume, low-domain forms are created in large tax departments



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PDF In Action

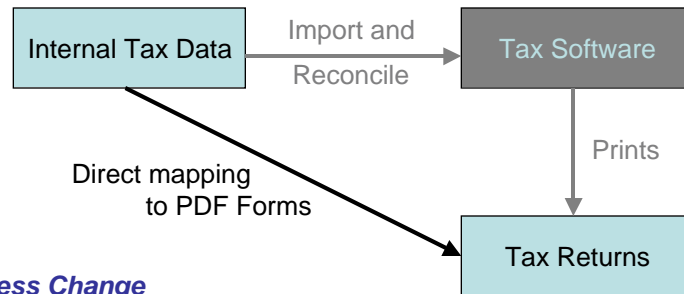
- Form Automation (Old Way)



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PDF In Action

- Form Automation (New Way)



Process Change

For high-volume, low domain forms.



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XML and PDF In Action

- XML is being used to
 - Integrate internal and external systems
 - Improve warehousing and analysis
 - Moving toward electronic filing
- PDF is being used to
 - Produce printed forms quickly
 - Maintain pretty internal electronic archives
 - Automate high-volume form generation



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Software Development Perspective

- Everything is moving to XML for data
- PDF is accepted and suitable for display
- Today's databases and development platforms simplify XML development
- Fortune 50 clients with large internal systems are demanding XML integration
- Web services will enable whole different level of integration



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Software Development Perspective

- Tough issues are under discussion
 - TIGERS, XBRL, IRS working groups
- Prefer 1 schema to 100 or more schemas
 - Can convert between schemas easily if root data items are the same, but why bother?
- Better to move than dabble



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Questions?

- Ask any questions on topics...
- My questions to you:
 - How are you using XML?
 - How are you using PDF?



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Questions

- More Questions?

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