Reduce the Cost of Integration

Web Services and SOAP

Chris Welsh
Principal Consultant
Agenda

- Overview of Web Services and SOAP
- Comparison with RNIF and AS2
- Implementation Case Study
- Integration with Smart Devices
- Widespread Adoption
- What PIDX Would Need to Move Forward
ACT Global Consulting

- Founded in Houston and London in 2006 by Industry Oilfield E-Procurement Professionals
- Expanded client base to Canada, mainland Europe as well as covering UK and the US
- Launched Middle East operations in 2007
- Developed Cloud Based Integration Services in 2011

- International consultants with deep experience implementing e-Business in Upstream and Downstream industries
- Only highly experienced professionals in Project Management, E-Commerce, E-Procurement and Data Management recruited
- Unique blend of Operational and Consulting experience in Oil & Gas
- Agnostic to solution provider and technology platform choices by clients, consulting based on industry standards and best practice

A proven methodology to position our clients to enjoy competitive advantage through operational excellence based on proven experience

Knowledge and experience to position our clients’ Operations as a competitive differentiator and genuine source of business value

Leveraging on decades of combined experience of best working practice from a range of industry sectors especially Oil &Gas, Energy and Retail

- Long term engagements with Oil & Gas clients including: BP, CononcoPhillips, Total, Hess, Noble, Schlumberger, OFS Portal, Elemica, Marathon, Quadrem, Baker Hughes, BAPCO, SparesFinder
## Practice Areas / Opportunities

<table>
<thead>
<tr>
<th></th>
<th>Consulting</th>
<th>Growth</th>
<th>Tools</th>
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<tr>
<td>Procurement Strategy Advisory</td>
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<td>P2P Programs &amp; Systems</td>
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<td>Master Data Management</td>
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<td>Contract &amp; Catalogue Management</td>
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Web Services and SOAP

- XML
- Envelope
- Attachments
- WSDL
- Security
- Non-Repudiation
- Reliability

```xml
<SOAP-ENV:Envelope>
  <SOAP-ENV:Body>
    <pidx:OrderCreate>
      •
      •
      •
    </pidx:OrderCreate>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```
Web Services and SOAP

```xml
<?xml version="1.0" encoding="utf-8"?>
  xmlns:documentation/>
  <wsdl:documentation/>
  <wsdl:types>
    <xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
      <xsd:element name="Invoice" type="Invoice"/>
      <xsd:complexType name="AuthorizationAssignedBy">
        <xsd:sequence>
          <xsd:element name="Party" type="Party"/>
        </xsd:sequence>
      </xsd:complexType>
      <xsd:complexType name="ListOfTransportEquipment">
        <xsd:sequence>
          <xsd:element name="TransportEquipment" type="TransportEquipment" maxOccurs="unbounded"/>
        </xsd:sequence>
      </xsd:complexType>
      <xsd:complexType name="ListOfContract">
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    </xsd:schema>
  </wsdl:types>
</wsdl:definitions>
```
Web Services and SOAP

## Exchange Protocol Comparison

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<tr>
<th>Feature</th>
<th>RNIF</th>
<th>AS2</th>
<th>SOAP</th>
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<tr>
<td><strong>Security</strong></td>
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<td></td>
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</tr>
<tr>
<td>• Authenticate Caller</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>• Sign Message</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>• Encryption</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>• Non-Repudiation</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Multi-Host Support</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Message Routing</td>
<td>✔</td>
<td>✔</td>
<td>✔*</td>
</tr>
<tr>
<td>• Payload Encryption</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Attachment Support</strong></td>
<td>✔</td>
<td>✔*</td>
<td>✔</td>
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<tr>
<td><strong>Business Processes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Pass Through</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>• Per Document Type</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>• Implementation Method</td>
<td>PIP</td>
<td>✔</td>
<td>WSDL</td>
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B2B Integration

ACT
GLOBAL CONSULTING
Energy E-Procurement Leadership
# Case Study 1

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Market Place/RNIF/PIDX</th>
<th>Direct/SOAP/CIDX</th>
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</thead>
<tbody>
<tr>
<td>Requirement</td>
<td>Oilfield Services PIDX Order, Invoice, Invoice Response</td>
<td>3rd Party Logistics CIDX Order, Order Change, Shipment Status</td>
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<tr>
<td>Partner Experience</td>
<td>10 years PIDX RNIF</td>
<td>1st Direct Integration</td>
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<tr>
<td></td>
<td>5 years Market Place</td>
<td>10 years 3PL</td>
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<tr>
<td>Time to Deploy</td>
<td>3 Months</td>
<td>3 Weeks</td>
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<tr>
<td>Cost Breakdown</td>
<td>Internal Team</td>
<td>Internal Team</td>
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<tr>
<td></td>
<td>Supplier Team</td>
<td>Supplier Team</td>
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<tr>
<td></td>
<td>Market Place Team</td>
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<tr>
<td>Volume</td>
<td>2000 Messages/Month</td>
<td>2000 Messages/Week</td>
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### Case Study 2

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Equipment Procurement Contractor Interface, PIDX Change Order</th>
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</thead>
<tbody>
<tr>
<td>Partner Experience</td>
<td>1st Direct Integration</td>
</tr>
<tr>
<td></td>
<td>10 years B2B</td>
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<tr>
<td>Time to Deploy</td>
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<tr>
<td>Cost Breakdown</td>
<td>Internal Team</td>
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<td>Supplier Team</td>
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<tr>
<td>Volume</td>
<td>20 Messages/Month</td>
</tr>
</tbody>
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Where the Industry is Going

What are the building blocks?

http://www.informationweek.co.uk/from-edi-to-xml-and-uddi-a-brief-history/6506480
Where the Industry is Going

What are the building blocks?

Ten Years to be an Expert

http://www.informationweek.co.uk/from-edi-to-xml-and-uddi-a-brief-history/6506480
Where the Industry is Going

- EDI, RNIF, AS2 – Static
- ERP Integration - Outside Firewall
- Web Portal – Static
- Direct B2B – Low Cost and Mass Adoption
- Open Source, JAVA, .NET - Continuing
- RESTful Web Service - Mass Adoption
- Smart Devices – Replace Handhelds
Widespread Adoption

- Adopting a Web Services Approach
- Developer Platforms are Mature
- Skills Base is Established
- Smart Devices Coming into Play
- Data Standards Underpinning Adoption
- Portal is Still Needed and Viable
- Prepare for Mass Web Services B2B
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PIDX Next Steps

- Embrace Web Services and SOAP
- Implementation Case Study for Field Ticket Devices (IOS, Android)
- Develop JSON Schemas
Get Solutions

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