



# Governance in the Development of an OASIS Standard for Business Documents

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[http://  
oasis-open.org/  
committees/  
ubl](http://oasis-open.org/committees/ubl)





# Objectives for this meeting

- Brief you on UBL 1.0 (now an OASIS Standard) as an example of a successful effort to develop a complex suite of XML specifications
- Preview UBL 2.0 (due in 2006)
- Review a significant UBL deployment in Denmark to show a government application
- Review challenges encountered in developing UBL 1.0
- Explain the advantages of the OASIS process



# The Universal Business Language (UBL)

- International effort to define a royalty-free library of standard electronic business documents
- Designed in an open and accountable vendor-neutral OASIS Technical Committee with participation from a variety of industry data standards organizations
- Plugs directly into existing business, legal, auditing, and records management practices with minimum disruption
- Eliminates re-keying of data in existing fax- and paper-based supply chains
- Fills the “payload” slot in B2B web services frameworks
- Maintains close alignment with existing EDI systems
- Presents vendors with a standard target for cheap off-the-shelf business software



# UBL 1.0: the “Fifth Generation” B2B language

**G1** (1Q 1998): CBL 1.0 (Veo/NIST)

**G2** (2Q 1999): CBL 2.0 (Commerce One)

**G3** (4Q 2000): xCBL 3.0 (Commerce One and SAP)

**G4** (1Q 2003): UBL 0.7 (OASIS)

**G5** (4Q 2004): UBL 1.0 (OASIS)

UBL represents over six years of continuous development in the creation of a standard XML business syntax.

# Advantages of a single markup

Standardization on a specific XML language confers major advantages:

- Lower cost of integration, both among and within enterprises, through reuse of common code for processing standard data structures
- Lower cost of commercial software (much lower than generic XML software)
- Easier learning curve (just a single library)
- Lower skill level required for everyday processing tasks (one-line scripts using regular expressions can often replace real programs)
- Standardized training, many skilled workers, universally available pool of system integrators
- Standardized input and output mechanisms
- Classic example: HTML

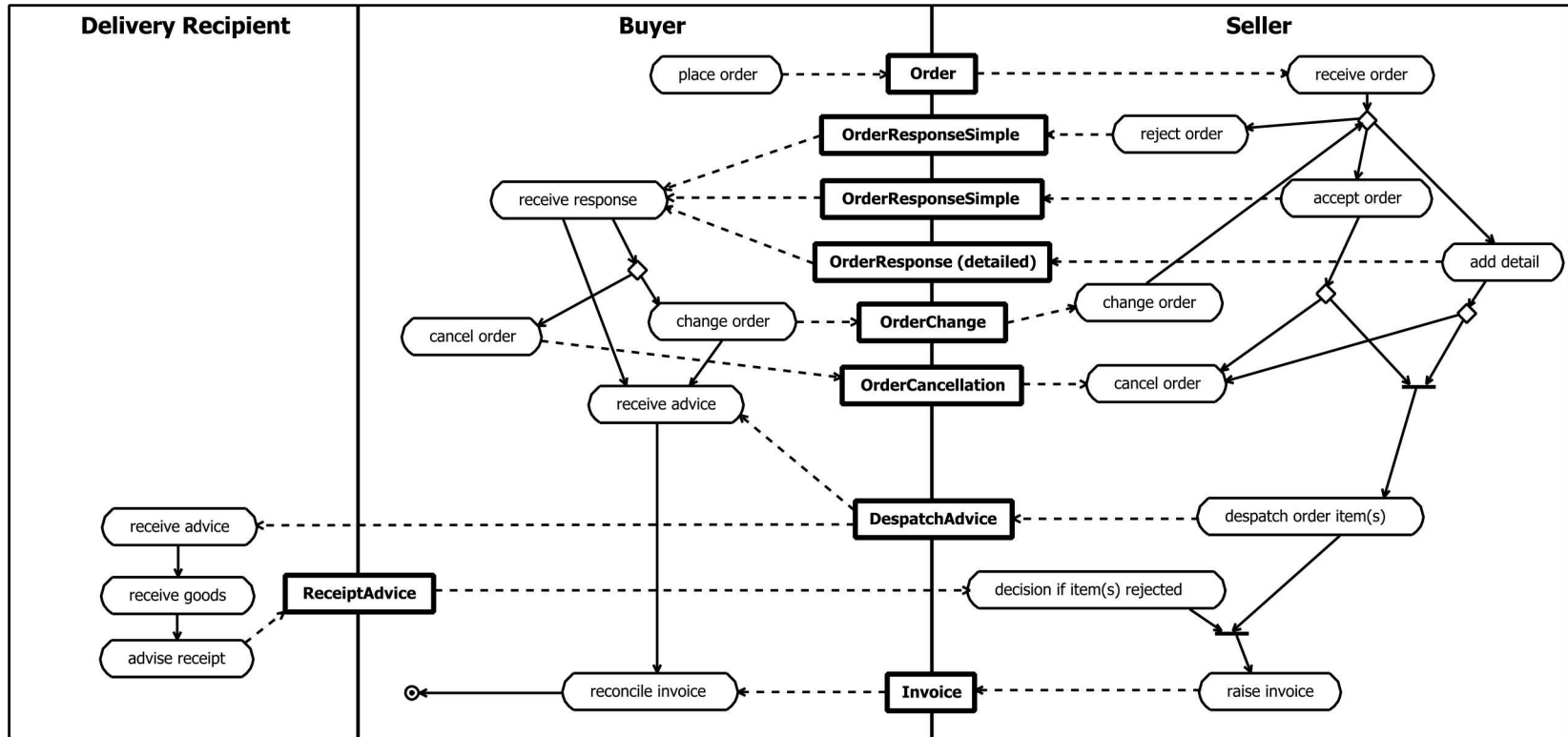
*Semantic alignment is unarguably a good thing, but only standardization on a **single markup** will yield these direct advantages.*



# Recent developments

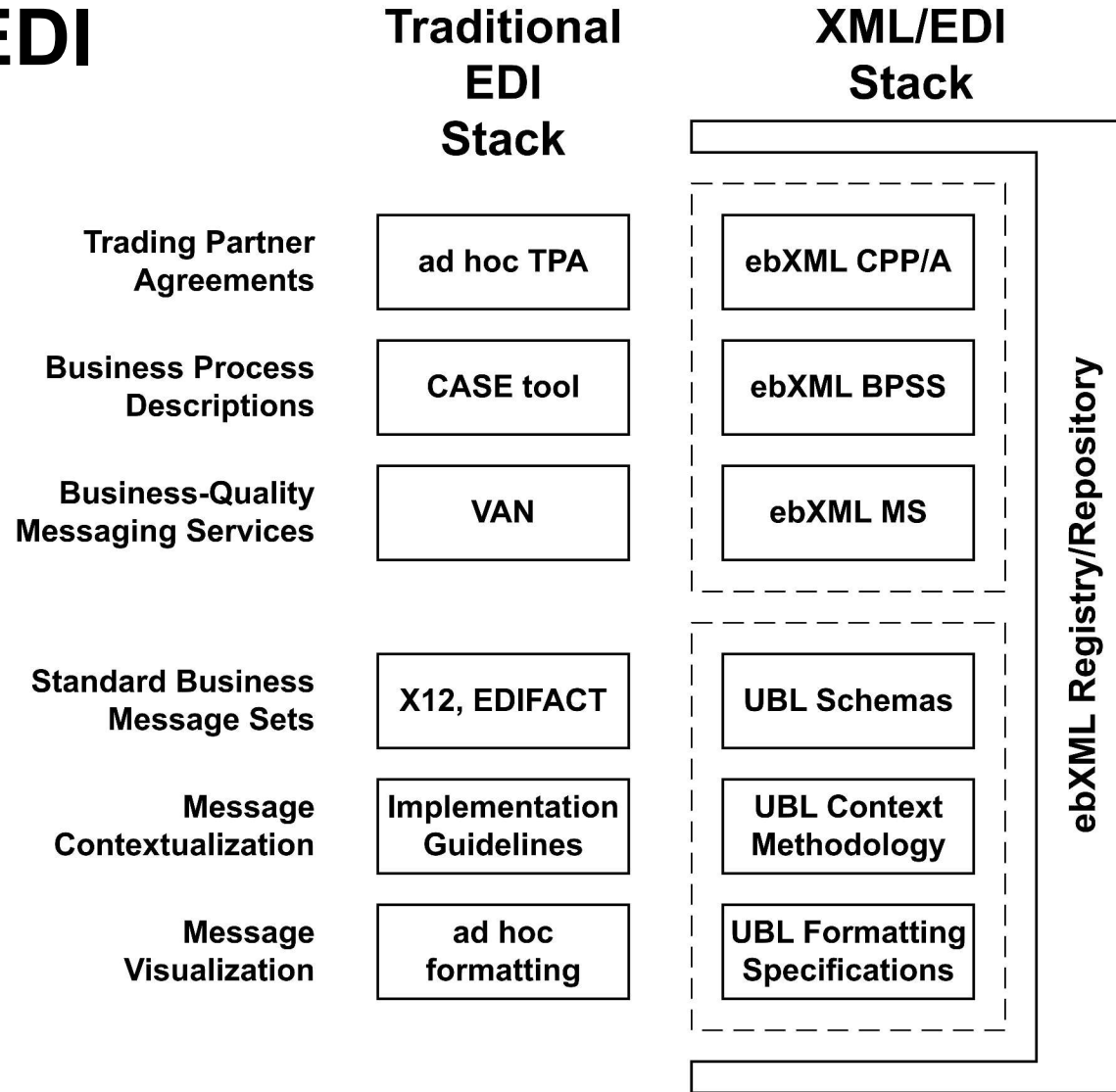
- Public mail list (ubl-dev) started for developers
- UBL 1.0 ratified as an **OASIS Standard** (November 2004)
- UBL 1.0 Naming and Design Rules ratified as an **OASIS Standard** (January 2005)
- UBL International Data Dictionary approved as an **OASIS Committee Draft** (April 2005): more than 600 standard data elements translated into Chinese (Simplified and Traditional), Japanese, Korean, and Spanish
- UBL Naming and Design Rules (NDR) adopted by major industries: chemicals (CIDX), petroleum (PIDX), agriculture (RAPID), real estate (OSCRE/PISCES), U.S. Department of the Navy (DON), U.S. Taxation (IRS)
- As of February 2005, UBL Invoice is required for all invoices in the public sector in Denmark (more on this later)

# UBL 1.0 order-to-invoice



*This model describes a very large class of use cases.*

# XML EDI







# UBL and the UN Layout Key

- The UN Layout Key has for more than 40 years served as the standard for paper documents used in international trade
- A mapping of all the UBL documents to their equivalent UN Layouts is provided as part of the UBL 1.0 release
- Free XSL-FO stylesheets are available to convert UBL documents to their Layout Key equivalents in PDF form
- A free Java transformer is available to convert UBL documents to HTML form
- Thus UBL is a *machine-processable data format* from which at any moment you can automatically generate an *internationally standardized paper representation*



# Example instance: Office supply Order

```
<?xml version="1.0" encoding="UTF-8"?>
<Order xmlns:res="urn:oasis:names:specification:ubl:schema:xsd:codelist:AcknowledgementResponseCode-1.0" xmlns:cbc="urn:oasis:names:specification:ubl:schema:xsd:CommonBasicComponents-1.0" xmlns:cac="urn:oasis:names:specification:ubl:schema:xsd:CommonAggregateComponents-1.0" xmlns:cur="urn:oasis:names:specification:ubl:schema:xsd:codelist:CurrencyCode-1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="urn:oasis:names:specification:ubl:schema:xsd:Order-1.0" xsi:schemaLocation="urn:oasis:names:specification:ubl:schema:xsd:Order-1.0 ../../xsd/maindoc/UBL-Order-1.0.xsd">
  <BuyersID>20031234-1</BuyersID>
  <cbc:IssueDate>2003-01-23</cbc:IssueDate>
  <cbc:LineExtensionTotalAmount amountCurrencyCodeListVersionID="0.3" amountCurrencyID="USD">438.50</cbc:LineExtensionTotalAmount>
  <cac:BuyerParty>
    <cac:Party>
      <cac:PartyName>
        <cbc:Name>Bills Microdevices</cbc:Name>
      </cac:PartyName>
      <cac:Address>
        <cbc:StreetName>Spring St</cbc:StreetName>
        <cbc:BuildingNumber>413</cbc:BuildingNumber>
        <cbc:CityName>Elgin</cbc:CityName>
        <cbc:PostalZone>60123</cbc:PostalZone>
        <cac:CountrySubentityCode>IL</cac:CountrySubentityCode>
      </cac:Address>
      <cac:Contact>
        <cbc:Name>George Tirebiter</cbc:Name>
      </cac:Contact>
    </cac:Party>
  </cac:BuyerParty>
  <cac:SellerParty>
    <cac:Party>
      <cac:PartyName>
        <cbc:Name>Joes Office Supply</cbc:Name>
      </cac:PartyName>
      <cac:Address>
        <cbc:StreetName>Lakeshore Dr</cbc:StreetName>
        <cbc:BuildingNumber>32 W.</cbc:BuildingNumber>
        <cbc:CityName>Chicago</cbc:CityName>
        <cbc:PostalZone>60022</cbc:PostalZone>
        <cac:CountrySubentityCode>IL</cac:CountrySubentityCode>
      </cac:Address>
    </cac:Party>
  </cac:SellerParty>
</Order>
```

# Example UN Layout Key printout: office supply Order

				PURCHASE ORDER		Page 1 of 1	
<b>Seller</b> Joes Office Supply 32 W. Lakeshore Dr Chicago, IL 60022				Purchase order number 20031234-1			
				Date 2003-01-23		Seller's reference (Quote no.)	
				Buyer's reference		Other reference (Contract no.)	
<b>Consignee</b> Bills Microdevices 413 N Spring St Elgin, IL 60123				<b>Buyer</b> Bills Microdevices 413 Spring St Elgin, IL 60123			
				<b>Buyer bank</b>			
				Country of origin		Country of destination	
Mode of transport		Date of despatch		Terms of delivery		Location	
Means of transport		Place of despatch		Special terms <b>Signature Required</b>			
Vessel/flight No.		Port of loading		Terms of payment		Currency of payment	
Port of discharge		Place of delivery					
Shipping marks, container number				No. and kind of packages, description of goods		Total gross weight (kg)	Total cube(m³)
						Total net weight (kg)	
Item / References	Description	Country of origin	Commodity code	Quantity	Unit price	Amount	
1	Pencils, box #2 red			5	2.50	12.50	
2	Photocopy Paper- case			10	30.00	300.00	
3	Pens, box, blue finepoint			10	5.00	50.00	
4	Tape, 1in case			3	12.50	37.50	
5	Staples, wire, box			10	1.00	10.00	
6	Pens, box red felt tip			5	5.00	22.50	
7	Mousepad, blue			12	.50	6.00	
Notes						Total amount 438.50	
						Name of signatory George Tirebiter	
						Place and date of issue Elgin, IL 2003-01-23	
						Signature	

Ceres/UBL Order net v2.00 2004.09.04 (common v2.14 2004-09-04)  
 Ceres/UN20 Order xls v2.28 2004-10-06  
<http://www.CeresSoftware.com/instrres-ublfr.htm>



# Major additions in UBL 2.0

- Resolution of a number of issues raised during the development of UBL 1.0 that were judged safely deferrable to 2.0 (example: Code Lists)
- A set of input specifications that will enable the creation of UBL-compliant forms input software (for example, XForms to make OpenOffice into a UBL input tool)
- A new methodology for specifying input and output in terms of UN Layout Key page geometry
- Additional support for U.S. and European taxation requirements from the OASIS Tax XML TC
- Four new document types donated by government-funded projects in Hong Kong and Singapore to support international shipping (Bill of Lading, Waybill, Forwarding Instruction, and Certificate of Origin)
- Ten new document types for an extended UBL procurement model proposed by IDA (EC) and OGC (UK) that implements a common European government eprocurement process; result will provide document types for pre-ordering phase (Catalogue, Request for Quotation, Quotation) and post-ordering phase (Credit Note, Account Response, Self-billed Invoice, Self-billing Credit Note, Debit Note, Remittance Advice, Statement of Account)

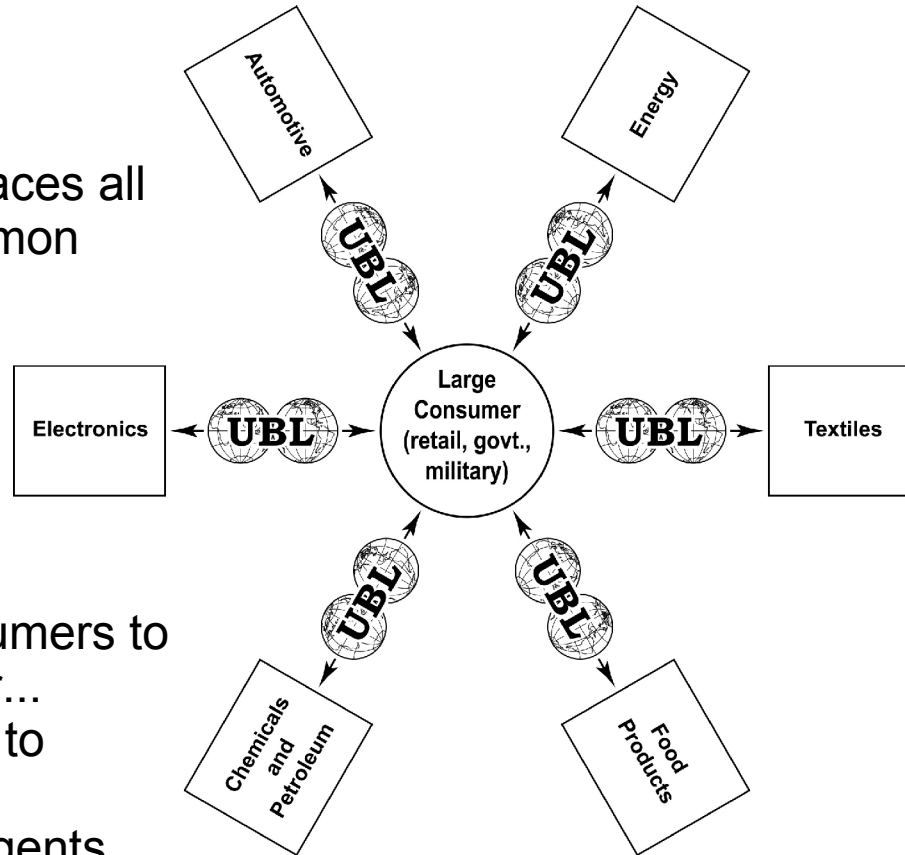
# UBL and UN/CEFACT

- UN/CEFACT is the United Nations Centre for Trade Facilitation and Electronic Business
- UBL has worked closely with UN/CEFACT and is the first standard implementation of the UN/CEFACT Core Components Technical Specification (international semantic harmonization)
- The UN/CEFACT Forum Management Group has invited UBL to join UN/CEFACT, and teams have been appointed to negotiate the transfer of UBL to the UN after the release of UBL 2.0
- This would put UBL into the UN body responsible for the development of electronic data interchange standards such as UN/EDIFACT, UNeDocs, and the UN Layout Key



# The role of a hub format

One adapter interfaces all suppliers to a common consumer...



as well as all consumers to a common supplier...  
and *all businesses* to the tax authorities  
and the customs agents  
and the accountants  
and the transporters ...

There appears to be no practical alternative to this plan.



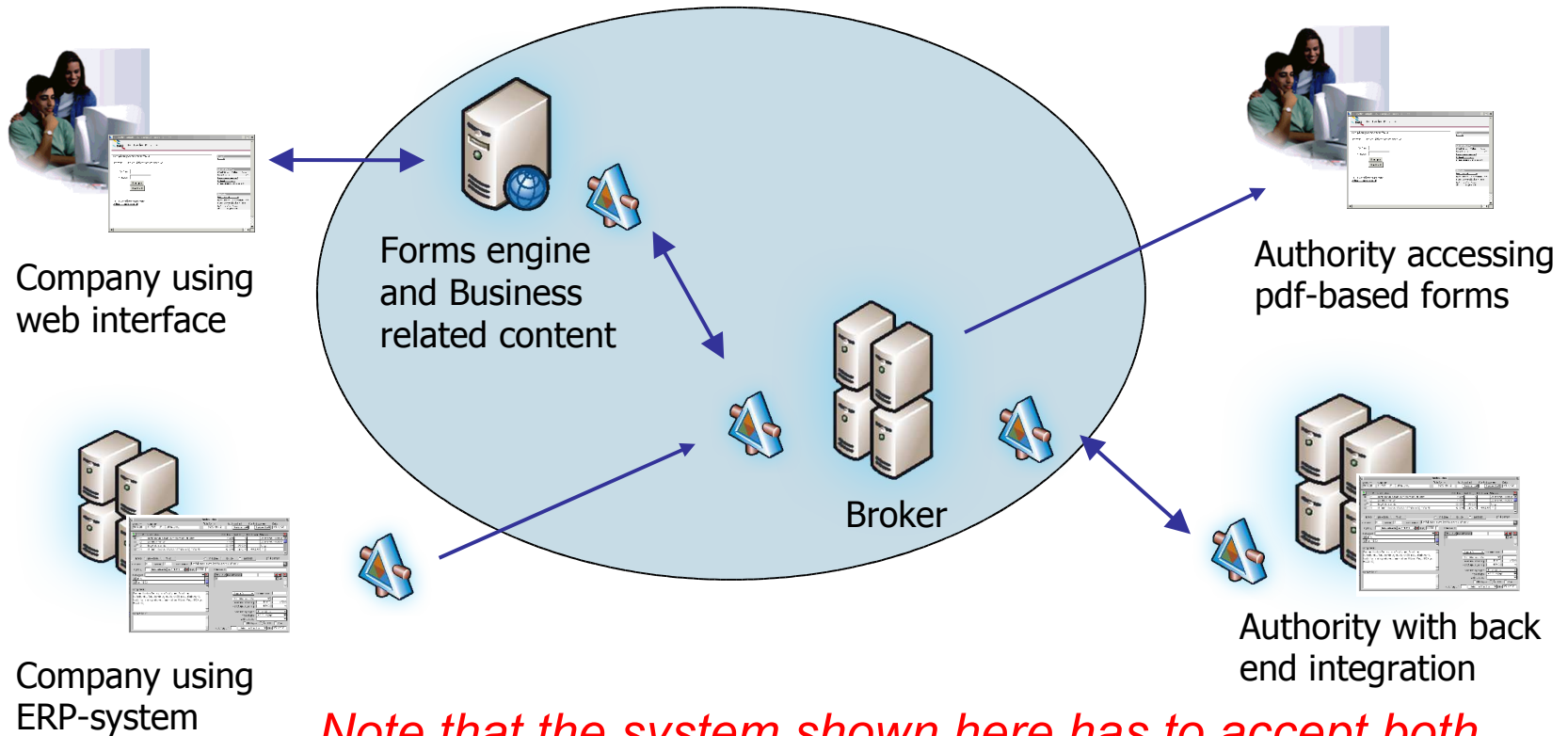
# Example: Denmark

- <http://www.oio.dk/XML/standardisering/eHandel/presentations>
- Effective February 2005, UBL Invoice is mandated by law for all public-sector business in Denmark
- By April 2005, the third month of deployment, 1.4 million UBL invoices had been exchanged in the Danish public sector
- UBL invoicing in Denmark is currently running at one million transactions per month and is on schedule to save the Danish government 94 million euros annually
- When UBL Order is implemented in 2006, the savings are estimated to rise to 160 million euros annually
- This adoption of one UBL document by one government affects 440 ***thousand*** businesses and will eventually force UBL support from every software company that hopes to sell products in Northern Europe



*This slide shows what a real user (the government of Denmark) actually does with a UBL-based system.*

# The Business Portal Infrastructure



*Note that the system shown here has to accept both sync and async inputs and has to produce both electronic and paper outputs. In other words, it has to support both machines and humans.*



# UBL development challenges

- All the usual stuff (getting people interested, keeping on schedule, etc.)
  - Hard to see how this could succeed without an (almost) full-time chair
- Lack of commitment to the majority rule decision-making process
- Secretarial support (site maintenance, calendar, issues tracking...)
  - Root of the problem: it takes a subject-matter expert to do this properly
- Communication across subcommittees
  - Ad hoc short-term work teams are often a better choice
- Versioning and naming
  - No coherent OASIS process that addresses all the hard bits
  - Takes a lot of thought that no one has time for
- Meeting logistics in an international context (see next slide)

# UBL logistical challenges

- F2F meetings are becoming increasingly difficult as travel becomes more expensive; *the F2F model of standards work probably doesn't have more than another 2-3 years*
- Solution #1: phone conferences
  - Problem: scheduling
    - Solution: Split meetings
      - Atlantic call: 08h00 in San Francisco, 16h00 in Brussels
      - Pacific call: 16h30 in San Francisco, 08h30 in Beijing
      - Europe/Asia call: 09h00 in London, 16h00 in Beijing
    - Cost: Communication and coordination overhead
    - Short-term ad hoc work groups can help with this
  - Problem: audibility
    - Solution: Wireless microphones
    - Challenge: No community adoption, no standards
    - Proposal: An OASIS TC to address this
- Solution #2: regional work groups
  - SC membership independent of TC membership is a big help
  - We need to develop community norms around this approach



# Advantages of OASIS

- Inexpensive participation
- Easy startup
- Transparent process with clear audit trail
- Relatively quick development, yet plenty of public review
- Publicly subscribable dev list aids in deployment and fosters open exchange of information
- Two-stage standardization facilitates implementation testing
- Majority rule mechanism resolves hard issues
- Clear, robust IPR policy protects users while encouraging industry participation (how does DRM propose to address this?)
- Tie-in with existing OASIS TCs (UBL, eGov, Taxation) promotes cross-work group information exchange

# The OASIS TC process

- OASIS members can be either individuals or organizations; there are several organizational categories
- An OASIS technical committee (TC) can be started by any five OASIS members representing at least two OASIS member organizations
- TCs are automatically given their own web pages and archived mailing lists; subcommittees can also have their own web pages and lists
- Participants in a TC are divided into “voting members,” “members,” and “observers”
  - Voting member: makes decisions, counted toward quorum
  - (nonvoting) Member: can do everything but vote; can be a voting member of a subcommittee
  - Observer: gets TC mail but cannot post or speak in meetings; no IPR commitment
- Maintenance of voting membership requires active participation; phone meetings are essential to this

# The OASIS standardization process (1)

## *Phase One: The TC working as a group of individual experts*

- **Working draft:** May or may not be publicly visible
- **Committee Draft:** Public document approved by a “full majority” (absolute majority) of the TC
- **Public review:** Optional step required to progress further; lasts for 60 days
- **Revision:** Optional in response to comments received from public; requires another 15-day public review; iterate till done
- **Committee Specification:** Public document approved by a “special majority” (2/3) of the TC in a formal vote conducted by OASIS
- A Committee Specification is a formal document available for general implementation
- The TC *may* request OASIS to standardize the specification or it may simply allow it to be used as the work product of a group of experts

# The OASIS standardization process (2)

## *Phase Two: OASIS acting as an association of organizations*

- **OASIS administrative review:** second half of the month in which the specification is submitted
- **OASIS familiarization:** first half of month following submission
- **OASIS ballot:** second half of month following submission
- The vote is *one per OASIS organizational member*
- Vote tally:
  - At least 15% yes with no negative votes: approved as an OASIS Standard
  - At least 15% yes with fewer than 15% no: negative votes must be reviewed by the TC, which may then withdraw the specification for further work or go ahead with standardization anyway
  - Less than 15% yes **or** 15% or more no: passage fails (but the TC can try again later)
- These criteria were developed to accommodate multiple languages and a wide range of subjects



# For more information

**UBL:** <http://oasis-open.org>

**UBL 1.0:** <http://docs.oasis-open.org/ubl/cd-UBL-1.0.zip>

**UBL 1.0 Naming and Design Rules:** <http://www.oasis-open.org/committees/download.php/9943/cd-UBL-NDR-1.0Rev1b.pdf>

**UBL 1.0 International Data Dictionary:** <http://www.oasis-open.org/committees/download.php/12205/cd-UBL-1.0-IDD-1.xsc>

**UBL UN Layout Key stylesheets:** <http://www.cranesoftwrights.com/u/>

**UBL/Layout Key Transformer:** <http://www.ambrosoft.com/>

**ubl-dev:** <http://www.oasis-open.org/mlmanage/>

**ebXML:** <http://ebxml.org>

**freebXML:** <http://www.freebxml.org>

**OpenOffice:** <http://openoffice.org>

**xmlroff:** <http://xmlroff.sourceforge.net/>

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