OASIS

CIQ TC Specifications

Customer Information Quality Technical Committee

General Introduction and Overview

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Abstract

This document provides a quick and general introduction and overview about the CIQ TC and the specifications it has developed for industry

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[1]xAL-Australia.XML

Address examples come from AS/NZ 4819:2003 standard of Standards Australia and are subject to copyright

[2]xAL-international.xml

Address examples come from a variety of sources including Universal Postal Union (UPU) website and the UPU address examples are subject to copyright.

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1 Introduction

This document provides a general introduction, overview and history of OASIS Customer Information Quality Technical Committee (CIQ TC) and the specifications it has produced for industry namely,

- **xNL** : extensible Name Language

- **xAL**: extensible Address Language

- **xNAL**: extensible Name and Address Language (combines xNL and xAL)

- **xPIL:** extensible Party Information Language (formerly known as extensible Customer Information language (**xCIL**)), and

- **xPRL**: extensible Party Relationships Language (formerly known as extensible Customer Relationships Language (**xCRL**))

The main goal of this document is to provide any type of reader (business or technical) with sufficient general understanding about the CIQ TC specifications.

Status

This document is currently a draft version and will be updated periodically on no particular schedule. Send comments to the editor.

Committee members should send comments on this specification to the ciq@lists.oasis-open.org list. Others should subscribe to and send comments to the ciq-comment@lists.oasis-open.org list. To subscribe, send an email message to ciq-comment-request@lists.oasis-open.org with the word "subscribe" as the body of the message.

General public may also use "Send comment" option on OASIS CIQ TC home page to submit any feedback.

For information on whether any patents have been disclosed that may be essential to implementing this specification, and any offers of patent licensing terms, please refer to the Intellectual Property Rights section of the CIQ TC web page (http://www.oasis-open.org/committees/ciq/).

The errata page for this specification is at http://www.oasis-open.org/committees/xxx/yyy.

1.1 Acknowledgements

The OASIS CIQ TC sincerely acknowledges the contributions of many around the world who have directly or indirectly contributed to the development and improvements to the specifications through comments, feedbacks and contributions since 1999.

2 Name, Address and Party

2.1 Definitions

Name

Name of a person or an organization

Address

A physical location or a mail delivery point

Party

A Party could be of two types namely,

- Person
- Organization

An Organization could be a company, association, club, not-for-profit, private firm, public firm, consortium, university, school, etc.

Party data consists of many attributes. However, a person or organization's name and address are the key identifiers of a "Party". A "customer" is of type "Party".

2.2 Problems due to lack of an industry standard to manage party related data

Following are some of the key problems due to lack of a standard to manage party related data in organisations and the aim of CIQ Specifications is to assist organisations in minimising these problems:

- Party data and in particular, name and address, as a data type, is very difficult to manage. This data is often volatile… customers/parties come and go, addresses change, names change. Name and address is subjective…it can be written in a number of different ways and still be the same. This problem is further compounded by the different ethnic backgrounds of name and address data in a global market. Organisations collect party data in various formats for various purposes namely, marketing, sales, billing, security, etc.

- Today's increasing security requirements at the national and international level due to cross border terrorism activities around the world requires party profile data exchange between countries, high reliability in party identity screening and verification, regardless of country, language, culture and geographical boundaries and party industry standards play a significant role to meet this serious, but important requirement.

- Party data plays a critical role in uniquely recognizing/identifying a person/organization in order to get a complete, clear and consistent understanding of the person/organization to provide effective and efficient services. To date this is an outstanding critical issue for most organizations as they have multiple information systems or databases capturing and representing party data in many different ways and as a result are either poorly integrated, or in many cases, not integrated at all. This fragmentation creates a major barrier to ever achieving a consolidated view of

the each customer – the foundation for successful Customer Relationship Management (CRM), Business Intelligence (BI), data warehousing and other customer-centric initiatives.

- Challenges in the treatment of name and address occur mostly during data entry particularly in a global e-commerce environment. The order in which address elements are naturally provided varies from country to country. In some countries the house number is provided before the street name, in other countries the house number is given after the street name. For some countries the house number is essential to determine the postcode, for other countries a simple city input is sufficient. Correct entry of an address in an international environment becomes heavily dependent on the knowledge of the person performing the data entry, or the ability to interpret the appropriate address elements. Lack of a standard way of capturing and representing international addresses compounds this problem further.

- Organizations want to exchange and manage party related data between different applications using a standard set of data interfaces. For example, one wants to move all the customer data and relationships from one CRM application to another.

- A customer-centric "global" or "International" organization could use its party details data for *some or all* of the following applications:

- Customer Profiling/Management

- Customer Marketing initiatives

- Customer recognition and relationship management initiatives

- Data Quality initiatives covering,

- Name and address parsing, searching, matching, de-duping and validation

- Initiatives for Bulk Mail discounts (Postal services)

- E-commerce (purchase, shipment, invoicing, etc)

- etc

With a global world as the market for an organization such as the above, the serious problems faced are multiple formats to represent party data to meet application specific requirements, point to point integration to exchange party data between applications that are expensive to maintain.

2.3 OASIS CIQ TC Specifications to address party data related issues

Party data standards ensure the consistency, accuracy, integrity and validity that are critical to the success of party related IT initiatives of an organisation.

It is evident from the earlier section some of the key issues with capturing, representing, using and managing party data. But despite the realization by organizations on the importance of these issue and party information management particularly in a global e-business environment, no XML specifications that concentrate on party profile/information management and importantly, independent of specific application requirements have been developed.

Though there are a number of XML specifications/standards addressing party data and in particular name and address, are available throughout the world, to a large extent, these specifications/standards have been designed with a particular business

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<u>requirement in mind,</u> for example, the expedient delivery of a piece of mail, purchasing, invoicing, shipment, tax, accounting, human resources, health, etc. This has generally meant that while the particular standard is appropriate for the purpose for which it was designed, it is frequently not suitable for a variety of other purposes. This puts pressure on organisations dealing with customers at a global level to capture and represent party data through more than one party standard.

The best strategic solution is to use a single standard throughout the organisation to capture, represent and exchange core party data (such as name, address and key identifiers) that can then be extended to support multiple application requirements.

It is therefore, imperative that there is a definite need for a single, global and open party (includes name and address) industry standard/specification implemented using XML schemas to address and manage the above discussed issues with party data and this is the precise objective of OASIS CIQ TC that led to development of the CIQ Specifications.

We at OASIS CIQ TC strongly believe in the following formula:

Data Interoperability = Data Integration + Data Quality + Data Standards + Data Semantics

All components on the right hand side of the above formula are important for successful data interoperability.

3 OASIS Customer Information Quality (CIQ) Technical Committee

Customer Information Quality (CIQ) technical committee was formed under OASIS in early 2000 to address the party data management problems discussed above.

Mastersoft, a customer information management solutions organisation from Australia founded this technical committee with its Chief Architect, Ram Kumar, as the funding chairman. Mastersoft provided initial contribution to the committee in the form of Name and Address Markup Language (NAML), Customer Identity Markup Language (CIML), and Customer Relationships Markup Language (CRML) XML specifications. AND Solutions, a global address data management company from The Netherlands provided its Global Address data XML specifications to the committee.

These specifications were used as reference models to further develop the party information standards under the CIQ TC.

3.1 Goals of CIQ TC

The goals of the CIQ TC to develop specifications for party profile/information are to be

- application independent
- platform independent
- vendor neutral
- truly "open", meaning
- free of royalties
- free of patents
- free of licenses
- free of Intellectual Property Rights (IPRs)
- freely available for public to download and implement the specifications without any restrictions, and importantly
- developed in an open process environment
- independent of language, cultural and geographical boundaries
- have the ability and flexibility to represent global party data and specifically with the ability to handle
- about 36+ party name formats
- addresses of 240+ Countries
- about 130+ Address Formats, and
- 5,000+ languages (dialects)

4 CIQ TC and its contributions to Industry

The CIQ TC has delivered the following specifications to the industry since its inception in 2000:

- Extensibile Name and Address Language (xNAL)
- Extensibile Name Language (xNL)
- Extensibile Address Language (xAL)
- Extensible Customer Information Language (xCIL), and
- Extensible Customer Relationships Language (xCRL)

xCIL is renamed as extensible Party Information Language (xPIL) and xCRL as extensible Party Relationships Language (xPRL) in Version 3.0.

4.1 Extensible Name Language (xNL)

xNL defines an XML format to represent party name information. A party name could be a "Person" or an "Organization". An "Organization" could be educational institutions like school, university, college, etc, clubs, associations, industry groups, not-for-profit bodies, consortiums, user groups, etc.

xNL is designed to handle international name data that are culture- and geography-specific. For example, the concept of given name and family names do not exist in some countries such as India (some regions), so the traditional FirstName/LastName or GivenName/FamilyName approach is not always applicable.

xNL is designed to handle names in over 36 formats internationally.

4.2 Extensible Address Language (xAL)

xAL defines an XML format to represent address data. An address could be any of the following address types and xAL has been designed (based on use cases and address structures around the world) carefully to handle them. Following are some of the key address types that xAL can be used to represent:

Airport	Business/Commercial Parks	Caravan Parks
Community Developments	Dual (Primary and Secondary)	Educational institutions
Entertainment/Recreation Parks	Hospitals	Large Mail Users (e.g. Hospitals, industrial zones)
Marinas	Military	Ports
Postal Delivery Points (e.g. P.O.Box, Mailbag, Mail Stop, Pigeon Holes)	Retirement Villages	Resorts
Royal Highness	Rural (with land, air and	Sporting Venues

water access)

• Territories	• Tribal	• Simple Urban
• Complex Urban	• Utility Urban	• Ranged Urban
• Villages	• Canals	• Banks
• Vacant lands	• Location type reference addresses	• Locations

xAL is designed to handle addresses of 240+ countries of the world and in over 130 formats.

4.3 Extensible Name and Address Language (xNAL)

xNAL defines XML specifications to represent party name and address data together. xNAL uses xNL and xAL specifications. An example of xNAL could be:

Attention: Mr. Ram Kumar

CEO

XYZ Corporation

23 Archer Street

Chatswood, NSDW 2067

Australia

4.4 Extensible Party Information Language (xPIL)

xPIL defines XML specifications to represent party centric data. Party centric data includes:

• Name
• Address
• E-mail address
• URL
• Contact numbers (Mobile, Pages, Fax, Landline, etc)
• Identification details (e.g. passport, license number, identification card, etc)
• Vehicle details
• Account details (e.g. bank account, club account, etc)
• Hobbies
• Reference Contacts
• Birth information
• Qualifications
• Physical details
• Revenues

- Nationalities
- VISAs
- Memberships
- etc

4.5 Extensible Party Relationships Language (xPRL)

xPRL defines XML specifications to represent implicit and explicit party relationships. Party relationships could be:

- Person to Person relationships
- Person to Organization relationships, and
- Organisation to Organization relationships

4.5.1 Person to Person Relationships

Some examples of Person to Person relationships are:

- Mrs Mary Johnson and Mr.Patrick Johnson, where Mary is the "Wife" of Patrick and Patrick is the "Husband" of Mary
- Mrs Mary Johnson and Mr.Patrick Johnson "IN TRUST FOR" Mr.Nick Johnson, where Mary and Patrick are the trustees of Nick and Nick is the beneficiary
- Mrs. Mary Johnson, Care of Mr.Patrick Johnson, where Mary is dependent on Patrick
- Complete Organization Structure (Employee-Employee Relationship)

4.5.2 Person to Organization Relationships

Some examples of Person to Organization relationship are:

- Mrs. Mary Johnson and Mr.Patrick Johnson "DOING BUSINESS AS" Johnson & Associates, where Mary and Patrick are persons who are jointly doing a business under the name of a company called Johnson & Associates.
- Mrs and Mr. Jonhson "IN TRUST FOR" Mr.Patrick Johnson "DOING BUSINESS AS" Jonshon & Associates
- Mrs and Mr. Venkatachalam "IN TRUST FOR" Mr Ram Kumar and Mr Laxmana Samy "ADMINISTRATORS OF" Sakthisoft Pty. Ltd "TRADING AS" Mantra Corporation
- Mr. Ram Kumar, Care of Sakthisoft Pty. Ltd, where Ram is the person and Sakthisoft Pty. Ltd is the company.
- Organization structure

4.5.3 Organization to Organization Relationships

Some examples of Organization to Organization relationship are:

- Company A "TRADING AS" Company B
- Company A is the subsidiary of Company B
- Company A is the parent of Company B
- Company A, Company B and Company C are the subsidiary companies of Company D

4.6 Evolution of CIQ TC specifications

In this section, we summarise the evolution of OASIS CIQ TC Specifications.

4.6.1 Evolution of xNL, xAL and xNAL Specifications

The diagram below summarises the evolution of xNL, xAL and xNAL Specifications since 1999.
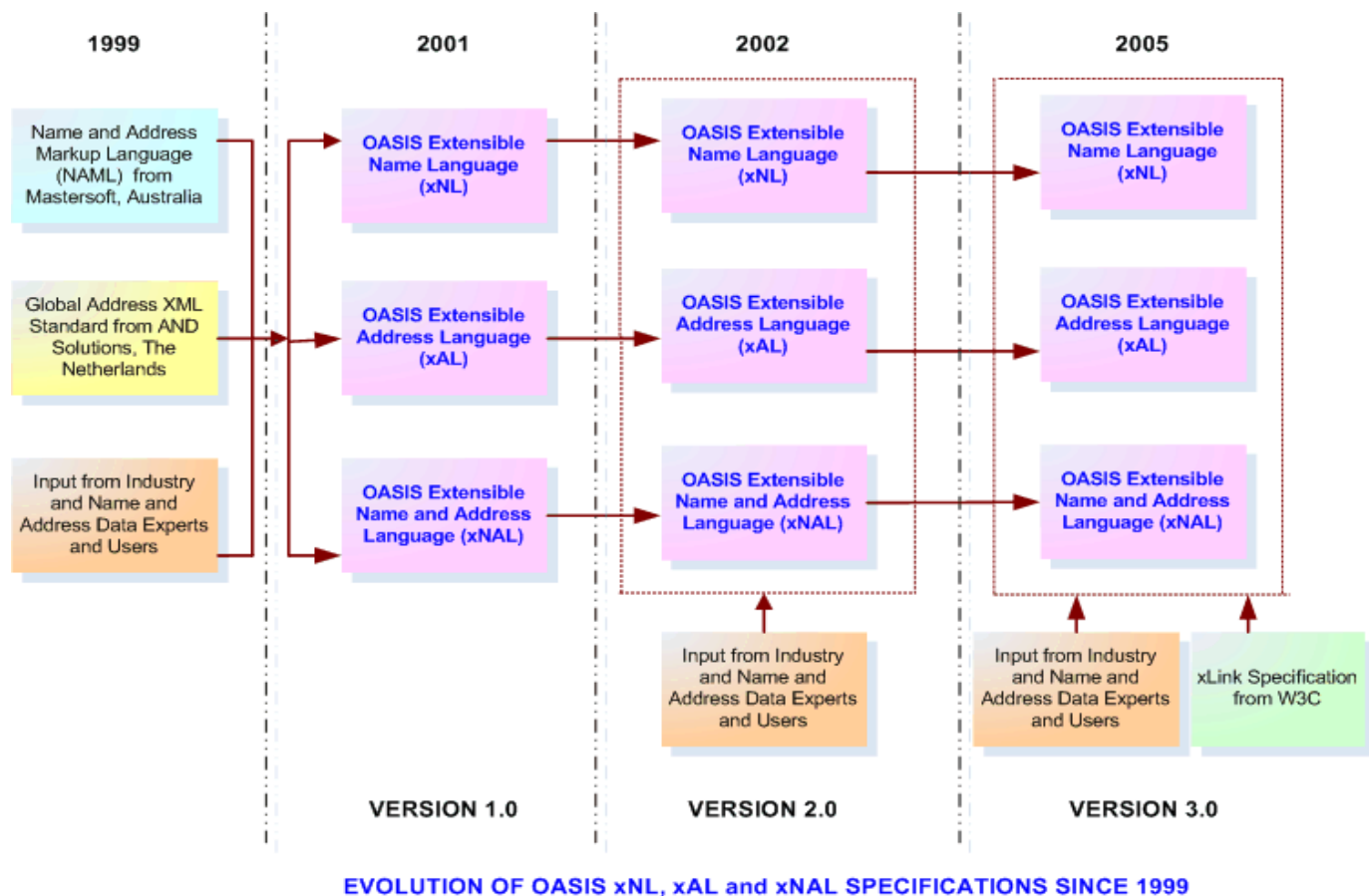
EVOLUTION OF OASIS xNL, xAL and xNAL SPECIFICATIONS SINCE 1999

4.6.2 Evolution of xCIL/xPIL Specifications

The diagram below summarises the evolution of xCIL/xPIL Specifications.
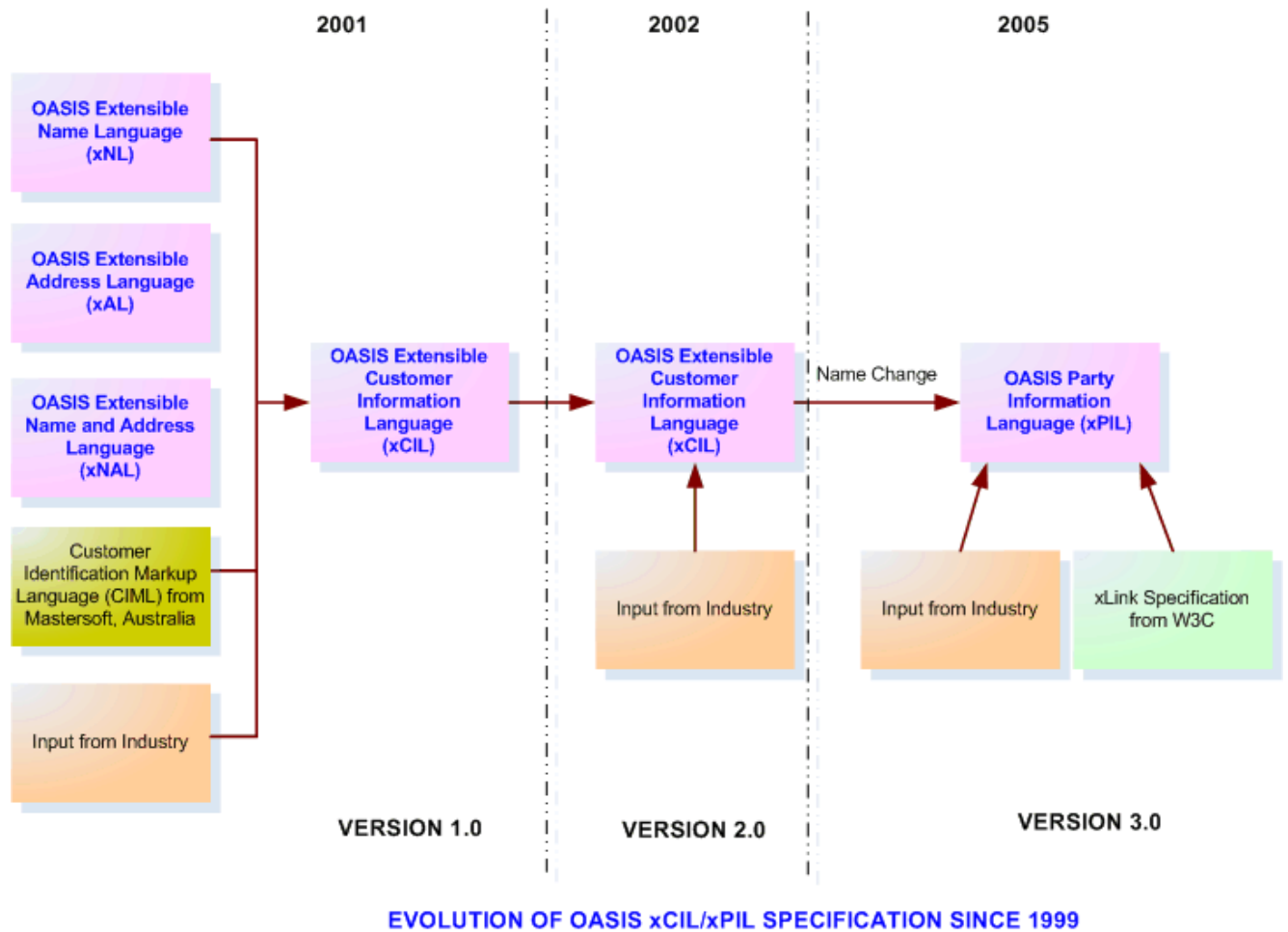
EVOLUTION OF OASIS xCIL/xPIL SPECIFICATION SINCE 1999

4.6.3 Evolution of xCRL/xPRL Specifications

The diagram below summarises the evolution of xCRL/xPRL Specifications.

EVOLUTION OF OASIS xCRL/xPRL SPECIFICATION SINCE 1999
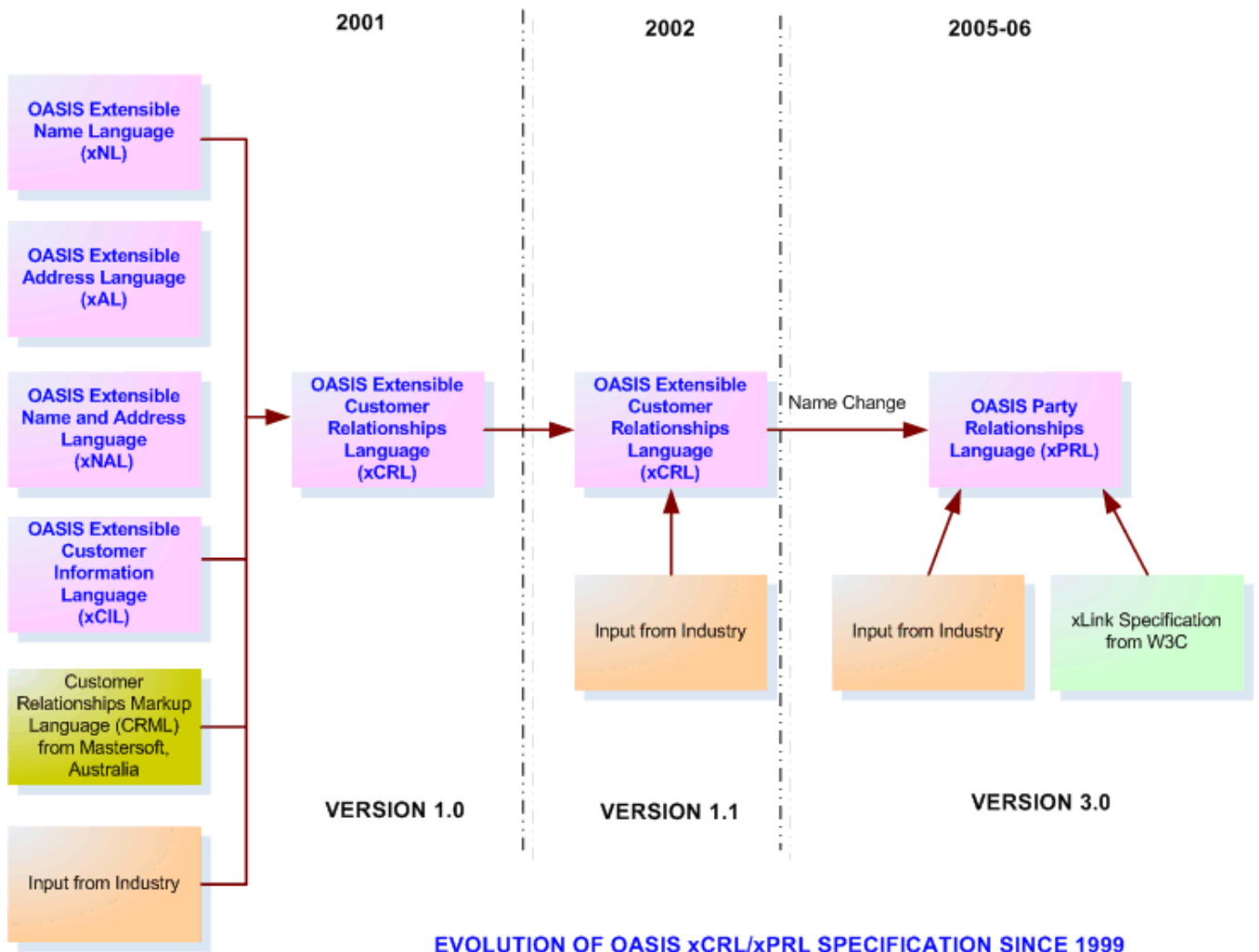
4.7 CIQ TC Specification Versions Released

Following are the different versions of specifications (CIQ technical committee approved) released by the CIQ TC since its inception in 2000.

	xNL	xAL	xNAL	xCIL	xCRL
Version 1.0	May 2001	May 2001	May 2001	May 2001	Dec.2001
Version 1.1	Sept.2001	Sept.2001	Sept.2001	Sept.2001	July 2002
Version 2.0	July 2002	July 2002	July 2002	July 2002	-
Version 3.0					

5 CIQ TC Specifications – Industry adoption and comparison with other similar initiatives

Party information and in particular, name and address is the widely used data in industry. Wherever a party is associated with an application, name and address data plays the leading role. In the following sections, we look at other similar initiatives (in particular, name and address specifications) around the world and how CIQ Specifications are different to them.

5.1 General Applications of Party Information

Party specific data are very commonly and widely used entities across different domains. We broadly categorise the applications of party specific data as follows:

Point to point data exchange

Organisation A exchanges data with Organisation B. Both organisations have different data models for Party, but they agree on the way they map their data models to the schemas to minimise the implementation effort.

Open data exchange

A number of diverse organisations exchange data in an open fashion. All systems are different, but still can be mapped to party schemas. All participants rely on the original TC specification, but some restrictions and modifications are still possible to suit the application and locale.
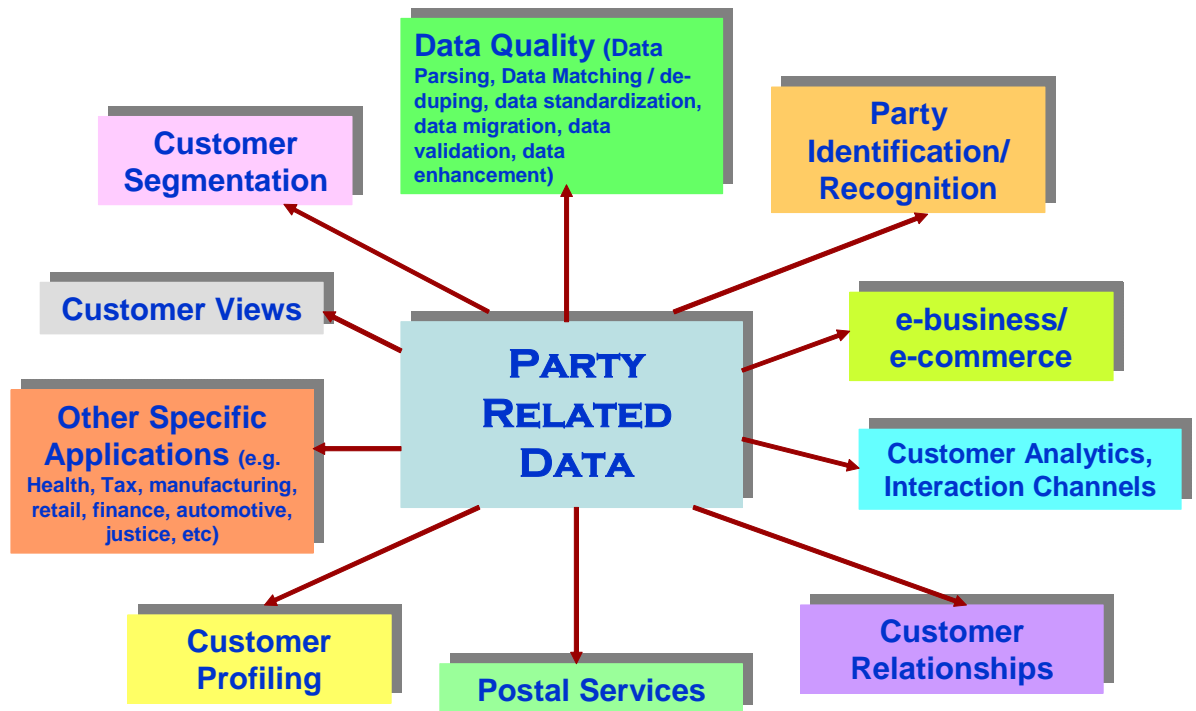
Database modelling

Party schemas and the data models they reflect can be used as a reference for design and implementation of relational or XML databases in regard to party entities.

Reuse by other standards and schemas

All party schemas are built for reuse. They can be easily included in other schemas where it comes to describing party details.

5.2 Specific Applications Using Party Information

The figure below summarizes CIQ TC Specifications family as the "base specification" to support various applications that specifically require name and address data. These applications could be performed within an organisation (say XYZ Ltd) itself. When XYZ Ltd uses different industry standards to meet specific application requirements, it is forced to implement party related components of the standard more than once. But CIQ Specifications help to avoid this duplication by enabling XYZ Ltd to implement one single standard (CIQ Specification) to represent party related data once throughout the organisation and then implement application specific standards around this CIQ Specifications. The reason being, CIQ specifications are independent of applications. This is the key differentiator between CIQ family of specifications and similar initiatives (in particular, name and address specifications) in industry that are designed for a specific application requirement:

Diagram showing "Party Related Data" at center connected to: Data Quality (Data Parsing, Data Matching / de-duping, data standardization, data migration, data validation, data enhancement); Customer Segmentation; Party Identification/ Recognition; Customer Views; e-business/ e-commerce; Other Specific Applications (e.g. Health, Tax, manufacturing, retail, finance, automotive, justice, etc); Customer Analytics, Interaction Channels; Customer Profiling; Postal Services; Customer Relationships.

5.3 Adoption of CIQ TC Specifications by Industry Types

CIQ TC specifications have been widely adopted by different groups around the world and some of the key types of groups are as follows (for confidentially reasons, we are not in a position to publish the names of the groups):

- Governments, including e-Government

- Insurance Companies

- Banks

- Solution providers

- Telecommunication companies

- Product Vendors

- Retail companies

- Standard Bodies/Groups/Consortiums

- OASIS Technical committees (e.g. Election and Voting Services, HumanMarkUp, UBL)

- Open Source Community for CRM

- Postal Companies

- Manufacturing companies

- Financial Service Providers (e.g. credit cards)

- Automotive industry

- Justice Sector

- Health

5.4 Industry Applications using CIQ TC Specifications Family

Following are some of the key broad categories of applications that have implemented CIQ TC Specifications:

- Single Customer View
- Customer recognition/identification
- Enterprise customer data management
- Data Quality (e.g. parsing, matching, de-duping, verification, validation and enhancement)
- Party profiling
- Purchase orders, invoicing and shipping
- Customer/Party relationships management
- Customer services
- Postal services
- Election services
- Justice, Legal and Corrective services
- Business Intelligence
- Customer/Party data interoperability frameworks
- Front end data capture

5.5 Other Name and Address Standard Initiatives in Industry

CIQ TC is not the only one in its attempts to create a set of standards for representing Party details. Though CIQ was the first to create a global XML standard for party name and address data, a number of other efforts are underway around the world to either define a name and address XML standard or define a name and address standard that is part of a particular application standard effort. Following are the some of the other key industry initiatives to define name and address specifications/standards:

Project Team	Consortium/Organization	Comments
British Standard 7666	BSI IST/36	Specific to names and addresses of U.K
GCA Address Data Interchange Specification (ADIS)	GCA/IDEAlliance and Universal Postal Union	Specific to postal service business. This specification has been approved by the Universal Postal Union.
HR-XML	HR-XML Consortium	Does not concentrate on name and address standards, as such, but has developed its own name and address standard as part of its specifications.
UK GovTalk Address	UK Government	XML schemas that extends on BS 7666 Standards for addresses and specific to UK addresses only.
Universal Postal Union	Universal Postal Union (UPU)	Specific to postal service business. Aligned with the USPS, UN/PROLST, and ADIS and works

Project Team	Consortium/Organization	Comments
(UPU)		with these groups closely.
Address Data Content Standard	US Federal Geographic Data Committee	Aims at building a standard for sharing address information. Limited to USA addresses only.
Australian Standard for Exchange of Client Information AS-4590	Standards Australia	No XML support. Mainly applicable to Australia and New Zealand.
Geographic Information -Rural and Urban Addressing	Standards Australia Standards New Zealand	No XML support. Mainly applicable to Australia and New Zealand.
HL7	HL7 Consortium	Does not concentrate on name and address as such. Defined its own structures for name, address and other common party information.
UN/CEFACT CC TBG 17 Working Group	UN/CEFACT	Have developed name and address core components and is quite limited in terms of supporting diverse name and address applications. Concentrates on purchasing, shipping, invoicing type documents that use party name and address
UBL Library Sub-committee	OASIS UBL	The party address core components are similar to CIQ xAL specifications, but in a reduced form. UBL used xAL as a reference in developing the address component in version 1.0 of its specifications
ISO 11180:1993	ISO	A standard for postal addressing is specifically limited to postal services type businesses
CEN WG331	CEN	When this group were in the proposal phase to develop an address standard in 2001, CIQ TC demonstrated how their proposed specifications were a subset of what CIQ TC has developed. The specification from CEN WG331 is limited to postal related area
USIRA Address Standard	USIRA with support from USFGDC	This initiative was started in May 2005 to develop another USA based standard for street and postal mailing addresses only

Other industry standards such as STAR, ACORD, OAG, ROSETTANET, XBRL, OTA, XBRL, GJXDM, GML, etc. were also analyzed in terms of their support for name and address and party data models.

To a large extent, these standards/specifications have been designed with a particular business requirement or application in mind, for example, the expedient delivery of a piece of mail, invoicing and purchasing, health, etc. or specifically designed for a country or a group of countries. This has generally meant that while the particular standard/specification is appropriate for the purpose for which it was designed, it is frequently not suitable for a variety of other purposes and importantly on a global scale.

CIQ TC is the only international standards group that concentrates specifically on developing "international party specifications" for the industry that is not tied to or is part of any particular industry application specifications (e.g. supply chain, human resources, health, accounting, postal services, e-commerce, CRM, Geospatial, etc) . CIQ TC is also the first standards group to build party "name" and "address" XML specifications for industry that is truly "global", "open", and "application independent".

These are the key differentiators between CIQ TC initiative and the other similar initiatives throughout world.

Appendix A. Notices

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