



OPEN INFORMATION MODEL

xBRL-JSON

xBRL-CSV

xBRL-XML

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XBRL HISTORY



(it was)

In 2019, the current version of XBRL is v2.1
XBRL v2.1 was finalised in 2003
XML still seemed like a pretty neat idea






```
10101010101010101010101010101010
01010101010101010101010101010101
10101010101010101010101010101010
01010101010101010101010101010101
110011001100110011001100110011
001100110011001100110011001100
10101010101010101010101010101010
01010101010101010101010101010101
10101010101010101010101010101010
01010101010101010101010101010101
```

```
<Report>
  <Revenue>4337000</Revenue>
  <Costs>1992000</Costs>
  <Profit>2345000</Profit>
</Report>
```

XML *was* a huge step forward over the binary formats that had gone before



It's 2019 and we live in a world of computers
talking to each other via APIs



If you want to make computers talk to each other, you use JSON

JSON? WHAT IS IT?

That's not important right now

What's important is that the world is full of developers who'd rather use JSON than XML

But if you must know...

```
{  
  "Revenue": 4337000,  
  "Costs": 1992000,  
  "Profit": 2345000  
}
```

JSON

```
<Report>  
  <Revenue>4337000</Revenue>  
  <Costs>1992000</Costs>  
  <Profit>2345000</Profit>  
</Report>
```

XML

Great!



ML stuff



THE BIGGER PICTURE

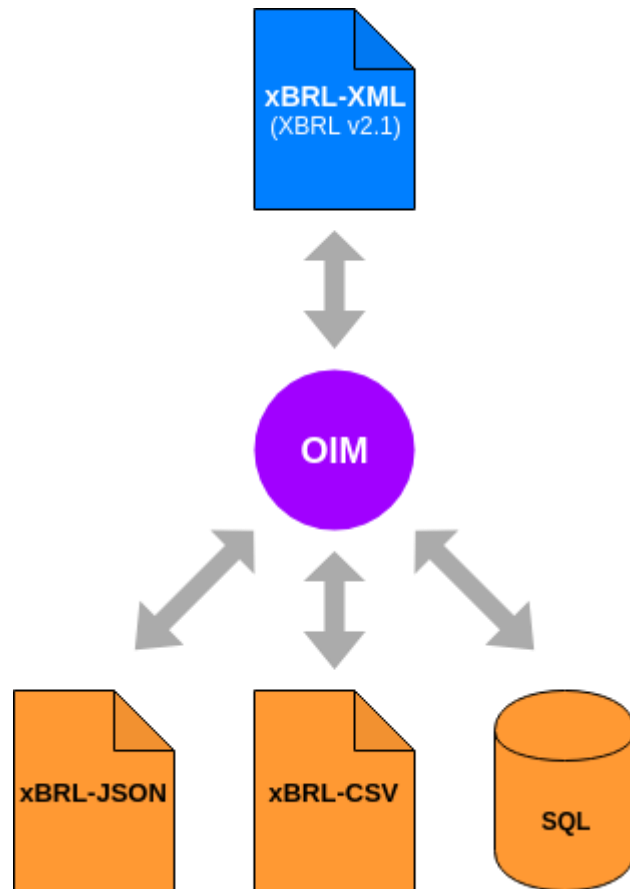
JSON is just another syntax

- Good for some things
- Not so good for others

There is a very large global investment in the XBRL v2.1 syntax

What we need is a **model** and a long term **migration path**

THE OPEN INFORMATION MODEL



OIM: A syntax-independent model of an XBRL report

Work with XBRL data in the format that makes most sense



XBRL SIMPLIFICATION

OIM makes a number of assumptions to give a **clean, simplified** model

Not everything in XBRL v2.1 is supported in OIM

Dual track approach:

1. XBRL v2.1 remains supported. Continue using it with existing tools
2. Migrate to the OIM subset and get the benefits of OIM tools



OIM CONSTRAINTS

Constraints:

- Simplified, unified dimensional model
- Generalised "links" model (aka "footnotes")
- Simplifying assumptions for DTS references
- No tuples
- No fractions

"Shims" are provided for some features

Constraints are documented in xBRL-XML specification

OIM DESIGN



XBRL: THE GOOD, THE BAD AND THE XLINK

XBRL is built on three standards:

- XML
- XML Schema
- XLink

XBRL: THE GOOD, THE BAD AND THE XLINK

XML

- Good for `mixed <i>content</i>`
... like iXBRL
- Strong associated validation

XML Schema

- Hideously complex structural validation
- Datatyping system is still best of breed
 - **monetary** is a **decimal** is a **numeric**

XLink

- The less said the better...



OIM DELIVERABLES

OIM – the report model

xBRL-XML

- Mappings from existing XML syntax to the model

xBRL-JSON

- JSON-based syntax for XBRL reports

xBRL-CSV

- CSV-based syntax for XBRL reports

xBRL-JSON

Aims to be the clearest representation of the model

```
"Fact-B90BB051582C5EE9E2AD8C6C79A5CE80": {  
  "dimensions": {  
    "concept": "dei:EntityCommonStockSharesOutstanding",  
    "entity": "cik:0001652044",  
    "period": "2018-04-19T00:00:00",  
    "unit": "xbrli:shares",  
    "us-gaap:StatementClassOfStockAxis": "goog:CapitalClassMember"  
  },  
  "value": "348952225"  
}
```

When developers ask "what does XBRL look like?" this is what we should show them

(this is the alternative)

```
<dei:EntityCommonStockSharesOutstanding
  contextRef='context_2'
  decimals='INF'
  id='Fact-B90BB051582C5EE9E2AD8C6C79A5CE80'
  unitRef='unit'>
  348952225
</dei:EntityCommonStockSharesOutstanding>

<xbrli:unit id='unit'>
  <xbrli:measure>xbrli:shares</xbrli:measure>
</xbrli:unit>

<xbrli:context id='context_2' >
  <xbrli:entity>
    <xbrli:identifier
      scheme='http://www.sec.gov/CIK'>
      0001652044
    </xbrli:identifier>
    <xbrli:segment>
      <xbrldi:explicitMember
        dimension='usgaap:StatementClassOfStockAxis'>
        goog:CapitalClassCMember
      </xbrldi:explicitMember>
    </xbrli:segment>
  </xbrli:entity>
  <xbrli:period>
    <xbrli:instant>2018-04-18</xbrli:instant>
  </xbrli:period>
</xbrli:context>
```

xBRL-CSV

CSV remains ubiquitous

Extremely efficient representation of record-based data

```
firm,size,country inc,limit,pct collateralized,interest,start,maturity
F50EOCWSQFAUV09Q8Z97,ld:Small,UK,10000000,.70,.040,2001-06-01,2020-12-31
AX378AEV345CAME93E45,ld:Medium,US,20000000,.50,.020,2010-03-01,2019-12-31
QWEE5SFSYV452DRG3483,ld:Micro,PL,30000000,.30,.030,2016-09-01,2017-10-31
```

xBRL-CSV

firm,size,country inc,limit,pct collateralized,interest,start,maturity
F50E0CWSQFAUV09Q8Z97,ld:Small,UK,100000000,.70,.040,2001-06-01,2020-12-31
AX378AEV345CAME93E45,ld:Medium,US,200000000,.50,.020,2010-03-01,2019-12-31
QWEE5SFSYV452DRG3483,ld:Micro,PL,300000000,.30,.030,2016-09-01,2017-10-31

xBRL-JSON representation of the top row of facts:

```
{
  "t1.r1.c2": {
    "value": "ld:Small",
    "dimensions": {
      "concept": "ld:CompanySize",
      "entity": "scheme:01",
      "period": "2017-05-01T00:00:00",
      "ld:Firm": "F50E0CWSQFAUV09Q8Z97"
    }
  },
  "t1.r1.c3": {
    "value": "UK",
    "dimensions": {
      "concept": "ld:CountryOfIncorporation",
      "entity": "scheme:01",
      "period": "2017-05-01T00:00:00",
      "ld:Firm": "F50E0CWSQFAUV09Q8Z97"
    }
  },
  "t1.r1.c4": {
    "value": "100000000",
    "decimals": 2,
    "dimensions": {
      "concept": "ld:LimitGranted",
      "entity": "scheme:01",
      "period": "2017-05-01T00:00:00",
      "unit": "iso4217:USD",
      "ld:Firm": "F50E0CWSQFAUV09Q8Z97"
    }
  },
  "t1.r1.c5": {
    "value": ".70",
    "decimals": 3,
    "dimensions": {
      "concept": "ld:PercentageCollateralisedAtInception",
      "entity": "scheme:01",
      "period": "2017-05-01T00:00:00",
      "ld:Firm": "F50E0CWSQFAUV09Q8Z97"
    }
  },
  "t1.r1.c6": {
    "value": ".040",
    "decimals": 4,
    "dimensions": {
      "concept": "ld:InterestRateChargedAtInception",
      "entity": "scheme:01",
      "period": "2017-05-01T00:00:00",
      "ld:Firm": "F50E0CWSQFAUV09Q8Z97"
    }
  },
  "t1.r1.c7": {
    "value": "2001-06-01",
    "dimensions": {
      "concept": "ld:LoanStartDate",
      "entity": "scheme:01",
      "period": "2017-05-01T00:00:00",
      "ld:Firm": "F50E0CWSQFAUV09Q8Z97"
    }
  },
  "t1.r1.c8": {
    "value": "2020-12-31",
    "dimensions": {
      "concept": "ld:LoanMaturityDate",
      "entity": "scheme:01",
      "period": "2017-05-01T00:00:00",
      "ld:Firm": "F50E0CWSQFAUV09Q8Z97"
    }
  }
}
```



xBRL-CSV design goals

Focus on record-based data

- repeating rows, not arbitrary 2D tables

Does not attempt to cope with existing CSV formats

- some level of transformation may be needed

Focus on bulk data

- CSV tables should be efficient



xBRL-CSV design

xBRL-CSV report consists of:

- One or more CSV tables
- JSON metadata file defining mapping to XBRL (OIM)

Provides flexibility in layout of table, e.g.

- Dimensions can be applied to columns
- Dimension values for row can be provided in cells

Does not support value transformation, e.g.

- Dates must be provided in ISO datetime format



OIM: CHOOSE THE RIGHT TOOL FOR THE JOB

xBRL-XML

- Existing market of mature validators: good for regulatory collection systems

xBRL-JSON

- Easier for developers to work with
- Good for (re)publication of XBRL data

xBRL-CSV

- Very compact for bulk, record-based data
- Good for granular reporting



GET INVOLVED

Provide sample data for xBRL-CSV testing

Help validate the assumptions in the requirements documents

Review the latest drafts of xBRL-CSV and xBRL-JSON

Join the Working Group!



QUESTIONS?

Latest specs:

<https://specifications.xbrl.org>

Contact:

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