

1. Profiles

The purpose of this section is to explain the notion of profiles and to provide several specific examples of profiles.

No one “implements XBRL”. Each different implementation which chooses to make us of XBRL picks and chooses what pieces they implement from the full set of XBRL technical artifacts. It takes a highly skilled engineer/architect to pick the right pieces, put them together correctly, and otherwise design a high-quality system. This approach is time consuming, expensive, and takes a high level of skill.

Profiles, or application profiles, help lesser skilled individuals create high-quality XBRL implementations based on “good practices” or “best practices”. Effectively, a profile is a template for implementing XBRL.

1.1. Application profile

An alternative is to make use of an existing profile or “application profile¹” which is proven, tested, designed by world-class engineers. For example, the US GAAP XBRL Taxonomy Architecture is a profile².

General Information						
Profile name:	SEC 10-K and 10-Q (Financial Reporting) Profile	SEC Risk Return Profile	Government of India, Ministry of Corporate Affairs Profile	IFRS, Global Filer Manual	XBRL Abstract Model 2.0	General Purpose, Explicit, Unambiguous XBRL-based Digital Financial Reporting Profile (Semantic Spread sheet)
Profile description	Reporting by public companies to the US Securities and Exchange Commission; Forms 10K, 10Q	Reporting by mutual funds to the US Securities and Exchange Commission; Forms 485BPOS, 497	Reporting to Ministry of Corporate Affairs; forms 23AC-XBRL, 23CA-XBRL	Financial reporting with IFRS	General purpose, proof of concept	General purpose financial reporting by private companies
For more information	http://xbrl.sec.gov/	http://xbrl.sec.gov/	http://www.mca.gov.in/XBRL/			http://digitalfinancialreporting.wikispaces.com/home
Component defined as	Network + Hypercube (implied or explicit)	Network + Hypercube (implied or explicit)	Network + Hypercube (implied or explicit)	Network + Hypercube (implied or explicit)	Network + Hypercube (implied or explicit)	Network + Hypercube (explicit only, implied not allowed)
Terms (XBRL Term)						
Network	Network	Network	Network	Network	None	Network
Hypercube	Table	Table	Table	Table	Cube	Table or Hypercube
Dimension	Axis	Axis	Axis	Axis	Aspect	Axis or Dimension
Member	Member	Member	Member	Member	Member	Member
Primary items	Line Items	Line Items	Line Items	Line Items	Aspect	Line Items or Primary Items
Primary item	Line item	Line item	Line item	Line item	Concept	Concept
Fact	Fact	Fact	Fact	Fact	Data Item	Fact
Decimals	Rounding	Rounding	Rounding	Rounding	Decimals	Rounding
XBRL Footnote	Parenthetical explanation	Parenthetical explanation	Parenthetical explanation	Parenthetical explanation	XBRL Footnote	Parenthetical explanation
Configuration options						
Semantics of an XBRL instance context entity	Reporting entity	Reporting entity				Reporting entity
Semantics of an XBRL instance context period	Calendar period	Calendar period				Calendar period

So, if you are building a system, using an existing application profile which someone else has defined or taking an existing application profile and tweaking it is a rational approach.

1.2. Profile Information

Information is provided to software applications by incorporating all of the useful links for an application profile within an XML file or other technique so that software applications can have all of this information available to the software application. For example, there is the profile information for the US GAAP XBRL Taxonomy provided within the Pesseract software application:

¹ Application profile, http://en.wikipedia.org/wiki/Application_profile

² Comparison of Profiles, <http://xbrlsite.azurewebsites.net/2018/Library/Profiles-2018-10-22.pdf>

Reporting Profile Configuration (XBRL-based public company financial reports in US GAAP to the SEC)

Rules Configuration | Reporting Styles | Templates | Exemplars | Examples, Samples, and Testing Files

- Model structure validation rules:**
- Fundamental accounting concept rules:**
- Level 1, 2, and 3 text blocks:**
- Reporting checklist rules:**
- Disclosure mechanics rules:**
- Type or class relations**
- Base Taxonomy (Elements, labels, documentation, references)**
- Topics**
- Dislosures**
- Topic/disclosure relations**

Preload/Reload (1) Preload/Reload (2)

Here is similar information made available within a machine-readable XML file³:

```
<Profile date="2021-03-23">
  <Name>US GAAP (SEC)</Name>
  <Description>US GAAP XBRL Taxonomy supplemental information for reporting to the SEC. This is not a complete set of disclosures; only about 70 disclosures are supported.
  Prototype.</Description>
  <Documentation>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/documentation/Index.html</Documentation>
  <URL>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/</URL>
  <ModelStructure>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/model-structure/ModelStructure-rules-us-gaap-def.xml</ModelStructure>
  <FundamentalAccountingConcepts>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/fac/fac.xsd</FundamentalAccountingConcepts>
  <ReportingStyles>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/fac/documentation/rss.xml</ReportingStyles>
  <TypeSubtype>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/type-class/type-class-disallowed.xsd</TypeSubtype>
  <Dislosures>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/disclosures-topics/disclosures.xsd</Dislosures>
  <Topics>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/disclosures-topics/topics.xsd</Topics>
  <TopicsWithDislosures>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/disclosures-topics/disclosures-with-topics-def.xml</TopicsWithDislosures>
  <DisclosureMechanics>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/disclosure-mechanics/disclosure-mechanics.xsd</DisclosureMechanics>
  <ReportingChecklist>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/reporting-checklist/reporting-checklist-rules-def.xml</ReportingChecklist>
  <BaseTaxonomy>http://xbrl.fasb.org/us-gaap/2018/elts/us-gaap-2018-01-31.xsd</BaseTaxonomy>
  <EntryPoint>http://xbrl.fasb.org/us-gaap/2018/entire/us-gaap-entryPoint-all-2018-01-31.xsd</EntryPoint>
  <Labels>http://xbrl.fasb.org/us-gaap/2018/elts/us-gaap-lab-2018-01-31.xml</Labels>
  <Documentation>http://xbrl.fasb.org/us-gaap/2018/elts/us-gaap-doc-2018-01-31.xml</Documentation>
  <References>http://xbrl.fasb.org/us-gaap/2018/elts/us-gaap-ref-2018-01-31.xml</References>
  <Formulas>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/reference-implementation/US-GAAP-ConsistencyChecks-V2016.1.xml</Formulas>
  <Formulas>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/reference-implementation/US-GAAP-CoreFinancialReportsSemantics-V2016.1.xml</Formulas>
  <Formulas>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/reference-implementation/US-GAAP-IndustrySemantics-CommercialAndIndustrial-V2016.1.xml</Formulas>
  <Formulas>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/reference-implementation/US-GAAP-ReportabilitySemantics-V2016.1.xml</Formulas>
  <Templates>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/templates/disclosures-templates-ref.xml</Templates>
  <Exemplars>http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/exemplars/disclosures-exemplars-list-ref.xml</Exemplars>
  <Repository>http://xbrl.azurewebsites.net/Repository_USGAAP/rss.xml</Repository>
  <Repository>http://xbrl.azurewebsites.net/Repository_USGAAP/rss_Microsoft10ks.xml</Repository>
  <Repository>http://xbrl.azurewebsites.net/Repository_USGAAP/rss_CharlieList.xml</Repository>
</Profile>
```

³ US GAAP XBRL Taxonomy Profile, <http://xbrl.azurewebsites.net/2020/reporting-scheme/us-gaap/profile.xml>

1.3. General business reporting application profile

Another important notion is that of a general application profile. What if someone did not want to build a system, all they wanted to do is pick up a system which makes use of XBRL and start using it.

That is the purpose of the General Business Reporting Application Profile which is documented here:

<http://www.xbrlsite.com/2014/Library/GeneralBusinessReportingProfile-2013-11-30.pdf>

The general business reporting application profile is defined as:

“The general business reporting application profile is an application profile of XBRL which is 100% compliant with the XBRL 2.1, XBRL Dimensions, and XBRL Formula specifications. It is possible to create SEC XBRL financial filings using this more disciplined application profile, but not all SEC XBRL financial filings are compliant with this profile.”

The general application profile is very similar in architecture to the US GAAP XBRL Taxonomy Architecture. However, it is far more disciplined and rigorous and controls or eliminates unnecessary flexibility.

Entropy is the notion of “lack of order or predictability; gradual decline into disorder.” Order is created. When only one option is necessary, if two options exist the fact that someone needs to then choose between two options means that the task is more complex.

1.4. NOLAP or the semantic spreadsheet

NOLAP or *Not Only SQL Analytical Processing (NOLAP) XBRL Application Profile* is described as follows:

“The Not Only SQL Analytical Processing (NOLAP) XBRL application profile is an application profile of XBRL which is 100% compliant with the XBRL 2.1, XBRL Dimensions, XBRL Formula, and Generic Linkbase specifications. The profile follows the spirit of the XBRL Abstract Model 2.0 Public Working Draft. It can be used to create OLAP-type hypercubes or digital spreadsheets of either low or high information fidelity. This document is a non-normative explanation of NOLAP, see the formal specification for normative guidance.”

Documentation for the NOLAP application profile can be found here:

<http://www.xbrlsite.com/2014/Library/NOLAP-2014-07-01.pdf>

The notion of NOLAP is described here in this blog post:

<http://xbrl.squarespace.com/journal/2014/5/1/nolap-xbrl-based-global-standard-olap-no-sql-required.html>

Essentially, NOLAP is a standard cube. A cube can be considered a generalization of a three-dimensional spreadsheet.

While traditional OLAP is a powerful and useful tool, OLAP has many known limitations including:

- There is no global standard for OLAP (A company created a product, ADAPT™, which reconciled different OLAP models to one standard model, but ADAPT™ is a proprietary model⁴)
- Cube rigidity
- Limited computation support, mainly roll ups; does not support other common types of computation-type relations such as a roll forward (changes between two periods), adjustment (difference between an originally stated and restated amount), variance (difference between two reporting scenarios)
- Limited business rule support and inability to exchange business rules between implementations
- Inability to transfer cubes between systems, each system is a "silo" which cannot communicate with other silos
- Inability to articulate metadata which can be shared between OLAP systems, for example standard dimensions or members used across many systems
- Focus on numeric-type information and inconsistent support for text data types
- OLAP systems tend to be internally focused within an organization and do not work well externally, for example across a supply chain
- OLAP tends to be read only

NOLAP overcomes these limitations of OLAP.

1.5. *OMG Standard Business Report Model (SBRM)*

The OMG Standard Business Report Model (SBRM)⁵ provides a logical conceptualization of a financial report and is, in essence, an application profile of XBRL.

1.6. *Universal Digital Financial Reporting Framework*

The *Universal Digital Financial Reporting Framework*⁶ is an XBRL-based approach to creating both human-readable and machine-readable general purpose financial statements. It is a de facto standard approach based on the good practices and best practices learned from creating XBRL-based reports which have been submitted to the SEC and the ESMA and attempting to extract information from the reports effectively. The framework uses the best practices and avoids the bad practices. The framework is proven and rigorously tested. The framework and method can be used to automate the entire record to report process.

For more information, please see the section *Method*⁷.

⁴ ADAPT White Paper, http://www.symcorp.com/downloads/ADAPT_white_paper.pdf

⁵ OMG, Standard Business Report Model (SBRM) Two Pager, <https://www.omg.org/intro/SBRM.pdf>

⁶ Universal Digital Financial Reporting Framework, <http://xbrl.squarespace.com/journal/2021/3/4/universal-digital-financial-reporting-framework.html>

⁷ Method, http://www.xbrlsite.com/mastering/Part02_Chapter05.N1_Method.pdf