# Linked Data: Standard's convergence

Enhancing the convergence between reporting standards

Maria Mora

Technical Manager
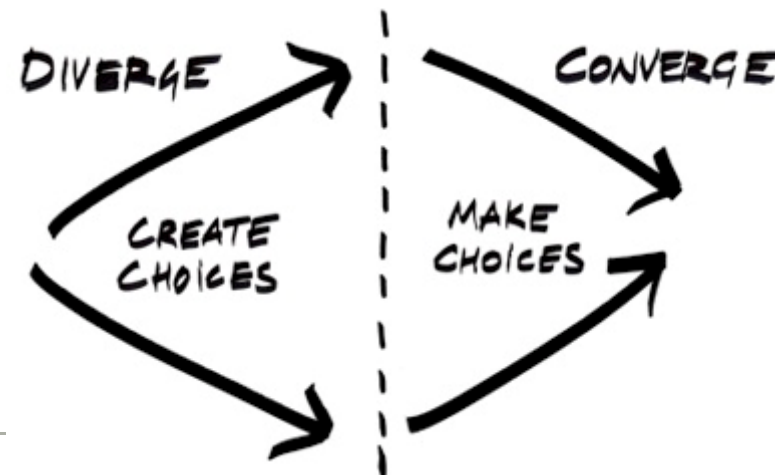
maria.mora@cdp.net

# Lets talk about a problem

◥ Lack of **a perfect convergence** between standards supposes a

barrier towards the expansion of a global economy:

- Financial: IFRS and US GAAP
- Sustainability: CDP and GRI

◥ But why?

**CDP**
DRIVING SUSTAINABLE ECONOMIES

# Lets analyse some examples: IFRS and US GAAP

## Insurance contracts: summary of joint board decisions to date

| Component | Current proposal |
|---|---|
| Scope | • Applies to "insurance contracts" as broadly defined rather than "insurance entities" (for example, bank guarantees and certain fixed-fee service contracts will be included in scope). |
| Current value measurement model ("building block approach") | • Insurance liability will be measured as the net present value of expected future cash inflows (premiums) minus outflows (claims and benefits).<br>• Cash flows will be remeasured each period using current assumptions.<br>• Net inflows at inception = deferred margin; net outflows = day 1 loss.<br>• Margin will be amortized as risk is released, with pattern updated each period.<br>• The IASB's model includes an explicit risk adjustment while the FASB's model does not.<br>• Discount rate will be based on the characteristics of the insurance liability. |
| Acquisition costs | • Direct costs associated with selling, underwriting, and initiating contracts consistent with the latest FASB model, except direct response advertising will be excluded.<br>• The IASB's model will include successful and unsuccessful efforts while the FASB's model will only include successful efforts. |
|  | • Generally expected to apply to contracts that use the unearned premium approach today (for example, property/casualty, health, single year term life).<br>• Premium revenue (net of deposit elements) will be |

CDP
DRIVING SUSTAINABLE ECONOMIES

# Lets analyse some examples: CDP and GRI

## CC5. CLIMATE CHANGE RISK

**CC5.1**
Have you identified any inherent climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure?

[tick-box selection]

**CC5.1a**
Please describe your inherent risks driven by changes in regulation

[table question]

**CC5.1b**
Please describe your inherent risks that are driven by change in physical climate parameters

[table question]

**CC5.1c**
Please describe your inherent risks that are driven by changes in other climate-related developments

[table question]

**GENERAL STANDARD DISCLOSURES**

**G4-2**
**Extracts from G4-2-a:**
a. Provide a description of key impacts, risks, and opportunities.

[…]

Section One should […] include:
• A description of the significant economic, environmental and social impacts of the organization, and associated challenges and opportunities. This includes the effect on stakeholders' rights as defined by national laws and the expectations in internationally recognized standards and norms

[…]

Section Two should include the following:
• A description of the most important risks and opportunities for the organization arising from sustainability trends

G4 reporters would report information requested by CC5.1 – CC5.1f under G4-2 and G4-EC2. However, G4-2 has a broader scope than the corresponding CDP questions, referring to economic, environmental and social issues more generally.

# Potential problems

◥Level of alignment between elements is always a **broader** or **narrower** correspondence.

◥Rarely one concept is exactly
equivalent to one or a set of concepts.
   **A=B? OR A=B+C?**
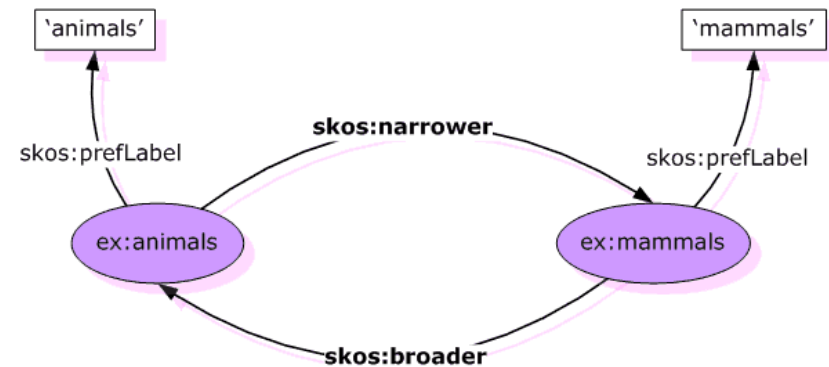


◥ **It is difficult to represent** these levels of relationship between terms (convergence)  by means of XBRL.

# Where we are…

◤We have **a first step achieved:** different reporting frameworks from different reporting arenas (financial, sustainability, environmental)  consider **XBRL to standardise in a digital way their reporting frameworks.**

◤ To **represent the alignment or convergence** between different reporting framework **we need more.**

◤Additional questions emerge in order to achieve the digital representation of the convergence, due to the **lack of exact correspondences.**

**CDP**
DRIVING SUSTAINABLE ECONOMIES

# What is needed?

◤ **It is needed the capacity to represent different types of relationships between XBRL elements** from GRI, CDP and IFRS and USGAAP schemas for example.

◤ The problem is about how to represent relationships between terms

◤ For that purpose Linked Data could be explored.

# What is Linked Data? Linking data sources

◤ Linked data appears as a set of best practices for publishing and connecting structured data on the Web. (Tim Berners-Lee, 2008)

◤ The origin of **Linked Data comes from the need** to create a common protocol of communication to allow changing information without generating inconsistences.

◤ Linked Data was created to **offer a solution to the growth** of e-government programs (open data initiatives) which **provide access to more and more volume of <u>heterogeneous data</u>**, but **<u>unreadable</u>** by **<u>automated mechanism</u>** despite of the information is **<u>in digital formats</u>** (doc, pdf, xls, images, etc.).

# Linked Data is a reality in Open Government data initiatives

◤USA: Data.gov

◤UK: Data.gov.uk
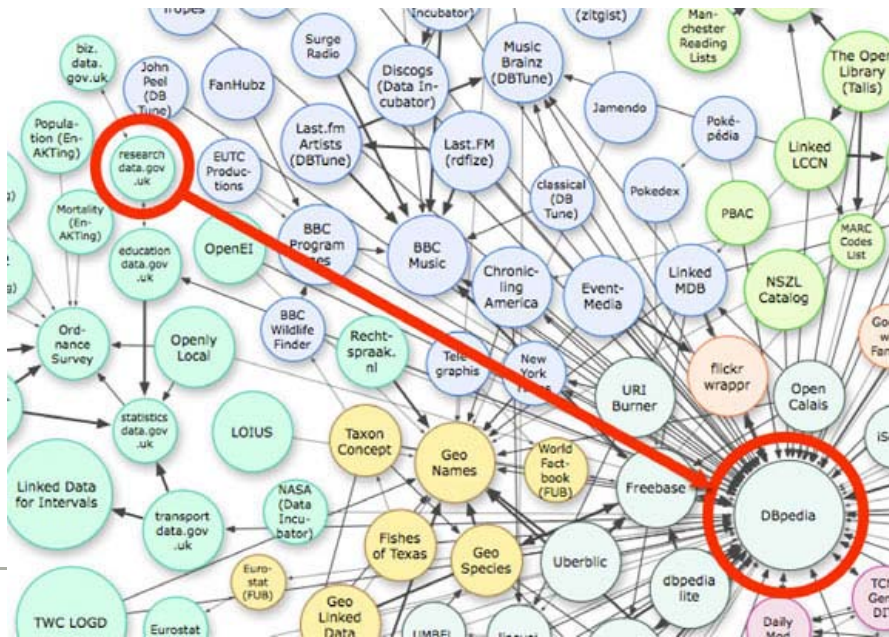
# Linked Data is a reality in crowd knowledge projects

◣ DBPedia from Wikipedia



Connecting pieces of [data](),
[information](), and [knowledge]() on
the Semantic Web using [URIs]() and
[RDF]().

# The essence of Linked data

◣ Linked Data= Good practices + RDF + Vocabularies

# Linked data is about good practices

Berners-Lee (2006) **outlined a set of principles for publishing data on the Web** in a way that all published data becomes part of a single global data space:

- Use URIs as names for things
- Use HTTP URIs so that people can look up those names
- When someone looks up a URI, provide useful RDF information
- Include RDF statements that link to other URIs so that they can discover related things

**CDP**
DRIVING SUSTAINABLE ECONOMIES

# Linked data is about ontologies - RDF

RDF (Resource Description Framework) permits to represent relationships between data in triple format; object, subject and predicate, by means of three elements:

- **Resources:** the things being described
- **Properties**: the relationship between things
- **Classes:** the buckets used to group the things

# Linked data is about vocabularies

◥A vocabulary is a collection of terms to describe more **properties** and **classes**. In 2015, there are around 511 vocabularies in Linked Open Vocabulary portal (LOV).

◥The number of vocabularies indexed by LOV is constantly growing thanks to a community effort.



511 Vocabularies in LOV

# What we can do with this equation: XBRL + Linked Data

◥**How can be used Linked data and XBRL in order to build a valid convergence model**?

- We need a technology to **represent a set of terms**: XBRL

- We need a technology to **represent a set of relationships**: Linked data
  **RDF:** Hierarchy, Equivalence, Associations.
  **Vocabularies:** represent a potential opportunity to express a big range of relationships between terms.

# What we can do with this equation: XBRL + Linked Data
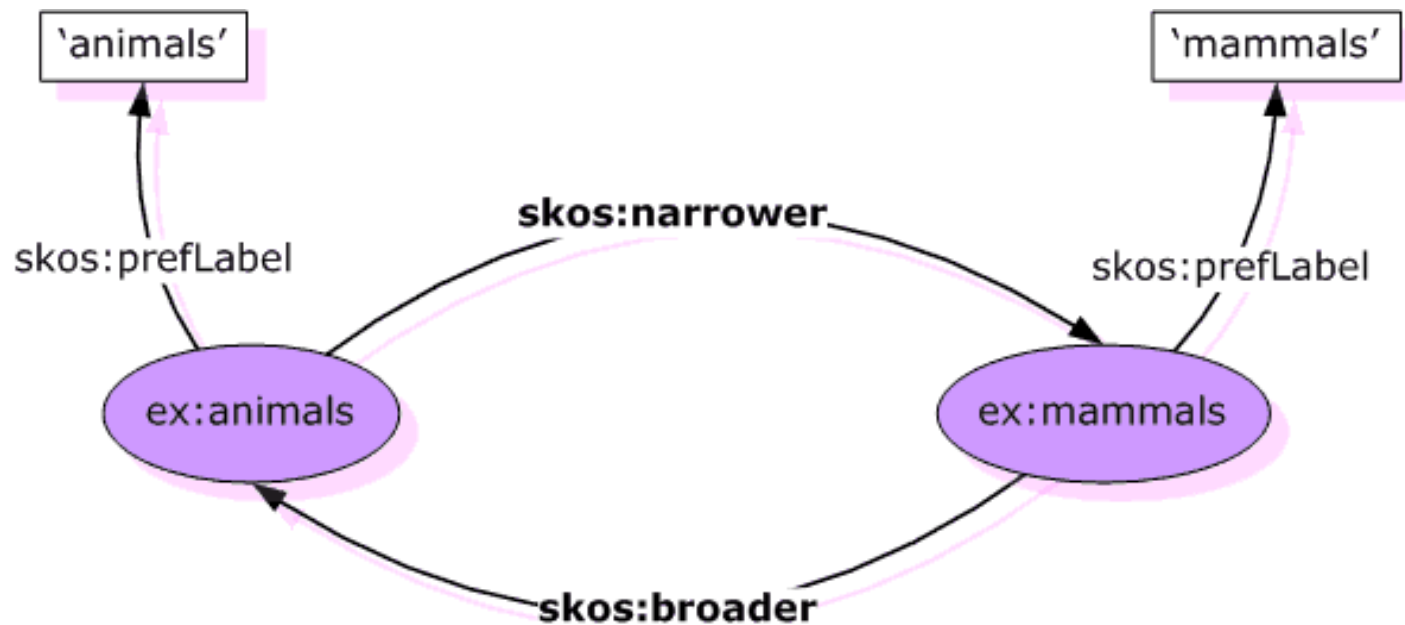
# Conclusions

◥There is a **lack of a perfect convergence** between reporting initiatives. IFRS vs USGAAP, CDP and GRI. The organisations still have pending challenges in order to elaborate a better convergence agreements to **reduce reporting burdens** and improve the equivalence between terms.

◥**XBRL is the standard technology adopted** by financial, sustainability and environmental reporting initiatives to represent their reporting framework in a digital way.

◥**Linked data** appears as a set of best practices for publishing **and connecting structured data on the Web**.

◥ **Linked data could be explored** to complement XBRL to represent correspondences between terms in **order to tackle current convergence models.**

◥**Linked data is a reality in Open Government Data Initiatives**, which could suppose an **opportunity** to increase the adoption of XBRL data.