Taxonomy building
and
Instance document creation

- The European case -

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Agenda

I. Disclosure standardization, motivation and current state
II. Taxonomy building
III. Instance document creation
IV. Conclusions

Section I

Disclosure standardization, motivation and state

Disclosure by companies of **standardized** accounting information

is a fundamental prerequisite

for **populating financial databases** reliably.

Uses of accounting databases

- Comparison company / peers
  - Investors, when choosing their investment portfolio
  - Management teams, to detect areas of improvement, PWC's AMMBIT 04
  - Tax packages
  - Auditors, to detect areas of added auditing risk
  - Credit risk analysis
- Economists and statisticians: "Greater payoffs will come from more data than more techniques to analyse existing data", A. Greenspan 02
- Research, e.g. fundamental analysis for risk diversification

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Availability of comparable accounting detail

(Ding 01)

Anglo-Saxon	Continental European
- "firms tend to publish relatively simplified balance sheet and income statements and provide afterwards detailed indexed notes"	- "*models* of balance sheet and income statement (which) contain detailed elements (are provided) […] and companies must disclose in the notes any other material information (which) may be interesting"
Tailor-made "materially relevant" disclosures	**Normalised items names and presentation styles**

Level of detail in accounting databases

- XBRL Online Express Dashboard
- Edgarscan Benchmarking Assistant

- BACH

- European CBSO databases
  – Portugal, Spain, Belgium, France…

Anglo-Saxon databases have Less detail than Continental European

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Anglo-Saxon accounting databases, 1

SECTION A - ASSETS

ASSETS

2. Accounts receivable (before deducting allowance for doubtful accounts)

(a) Trade (including trade receivables with parent, subsidiaries and affiliates) . . . .

(b) Other (exclude amounts due from parent, subsidiaries and affiliates - see item 4(b)) . . . .

(c) Less: allowance for doubtful accounts . . . .

3. Inventories (Exclude inventory of leased assets of operating lessor - see item 9(a) and capital leased assets of lessee - see item 9(a); before deducting provision for losses - see item 10) . . . .

4. Investments in and claims on parent, subsidiaries and affiliates (before deducting provision for losses - see item 10; exclude foreign exchange gains or losses - see item 19)

Statistics Canada

Anglo-Saxon accounting databases, 2

- PWC's
AMMBIT

Anglo-Saxon databases have Higher costs than Continental European

XBRL, eXtendible Business Reporting Language

… allows ID'ing disclosures

… everyone agrees to use common IDs

… everyone adapts their reporting systems to the set of IDs agreed upon

… so information systems can effectively communicate

XBRL is the **disclosure norm** Anglo-Saxon GAAPs do not contemplate

provided *common detail* is published AND a *majority of companies* use it

XBRL taxonomies contain…

A list of the elements that are commonly published under the GAAP, identified with an ID	IssuedCapital
The arithmetic constraints that relate it to other items (calculation linkbase)	Adds into EquityParentTotal
The position within financial statements the element is expected to appear in (presentation linkbase)	Credit side, after Equity (Presentation)
The label that describes it under each language (label linkbase)	EN: Issued Capital
The relevant legislation that defines the element (reference linkbase)	IAS1§73e, IAS 1§72

… all the information any uninformed user (human or not) will require to interpret financial statement data

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Section II

Taxonomy building in Europe

… in each European country

Each EU country will have two alternatives:

a. Created a taxonomy that is national specific, or

b. Extend the IAS-XBRL + 4th Directive taxonomies

PT.IssuedCapital

IssuedCapital

Elements companies publish under IFRS

PT-XBRL taxonomy	*Linkbases*
Adds into EquityParentTotal	Calculation
Credit side, after Equity (Presentation)	Presentation
PT: Capital EN: Issued capital	Labels
POC account 51	References

Equivalence
(Teixeira et al. 03)

* **Disclosure equivalence**
(which elements are required to be disclosed?)
(Share IDs, not namespace)

* **Absolute equivalence**
(how elements are measured?)
(Calculation linkbase)
(References linkbase)

Why integrate taxonomy building?

- Facilitate the adoption by companies of comparable accounting detail - Multinationals and software builders operating in the international market

- Reduce one of the two sources of international incomparability of accounting information, i.e. the way items are aggregated (as long as you have the detail, "the data can be shaped in any way")

- Make taxonomies more robust to changes in national accounting policies

- Facilitate GAAP comparison

- Investors and lenders are able to compare the evolution of key financial indicators among different companies and different countries over time (BACH database)

- Informatics will end up integrating them, Kalfoglou, Schorlemmer 03

Section III

Instance document creation in Europe

General assumption

XBRL Taxonomy -IssuedCapital - …	**Company's set of accounts** - XPTO - …	**Company's XBRL instance document**

…
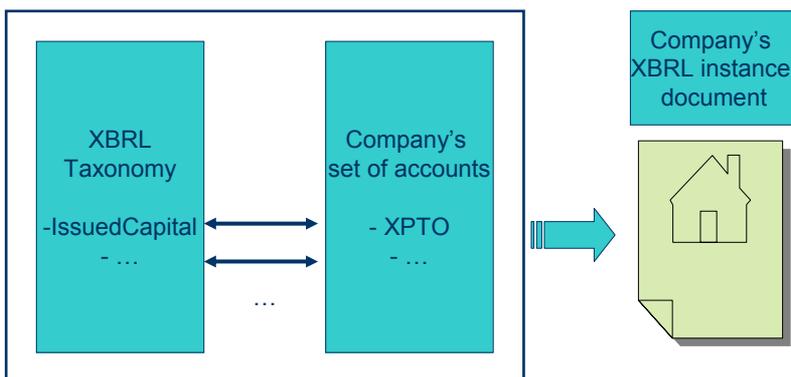
Implies an investment on the company's part, subject to a cost / benefit evaluation

Benefit evaluation under different accounting traditions - companies

Anglo-Saxon	Continental European
• + listed companies	• + non-public companies Frank & Mayers 94
• + owners per company	• + more concentrated Ooghe & Vuyst 01
• Market-based financial system	• Bank-based financial system Allen & Gale 00
• + Agency issues	• + need for easy access to highly comparable data
• Financial reporting HAS potential payback as investors will value the transparency Hodge et al.02	• Financial reporting is a legal requirement; NO payback

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Benefit evaluation under different accounting traditions – data compilers

An XBRL-based reporting system would:

- Reduce the current cost of keying in the data
- And consistency checking it
- Allow use of bigger samples
- Allow access to data that was difficult to treat before (e.g. related companies)

But if too small a proportion of companies implement XBRL into their information systems, the benefits of XBRL may fade

A *legal requirement* would balance the scale, but one will not come unless a democratic access to XBRL instance document creation is available.

One solution - IntelExtra

Current reporting system

| Company's set of accounts - XPTO - … | → | Regular financial statement — Paper, pdf, … | **IntelExtra** → | Company's XBRL instance document |
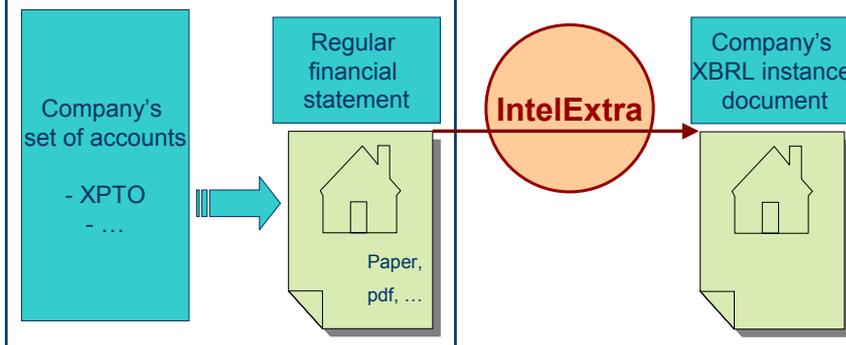
An intelligent information extraction agent that converts accounting facts into XBRL.

How does IntelExtra work?
Document/table analysis components

Consolidated balance sheet In millions of CHF

	2001	2000
Long-term assets		
Property, plant and equipment[12]	15,052	13,785
Intangible assets[13]	14,943	15,870
Investments in associated companies[14]	186	652
Other investments[15]	2,366	1,558
Deferred income tax assets[11]	1,410	460
Other long-term assets[16]	2,454	2,473
Total long-term assets	36,411	34,798
Current assets		
Inventories[17]	5,780	5,754
Accounts receivable – trade[18]	5,779	5,519
Current income tax assets[11]	244	435
Other current assets[19]	2,524	2,381
Marketable securities[20]	21,412	18,086
Cash and cash equivalents	3,136	2,562
Total current assets	38,875	34,737
Total assets	75,286	69,535

31 December

1. **Locate tables**
2. **Segment cells**
3. **Distinguish functional areas**
4. **Rebuild reading paths**

(Silva et al.03,04)

How does IntelExtra work?
Accounting interpretation components

Data resulting from the document/table analysis components

	Attribute 1	Attribute 2	Attribute 3	Data
+	Long term assets	2001	31 December	
	Property, plant and equipment	2001	31 December	15,052
	Intangible assets	2001	31 December	14,943
	Investments in associated companies	2001	31 December	186

Accounting knowledge contained in jurisdictional taxonomies

+
> ifrs-gp_AssetsTotal
> ifrs-gp_AssetsNonCurrentTotal
> ifrs-gp_PropertyPlantAndEquipmentNet
> ifrs-gp_IntangibleAssetsNet

World knowledge (e.g. Wordnets)

= INFORMATION ABOUT THE COMPANY

Comparison with related intelligent agents

PWC's Edgarscan and E&Y's FRAANK	IntelExtra
… only for the US-GAAP … they work for English … they base themselves on SGML input … they extract around 80 variables, due to lack of disclosure format in financial statements: Non-normalized item names. Lack of formal definitions. **(Hua 03)**	… can adapt to different jurisditional GAAPs … and languages … based on very low level input format, to be "freer" … in EU accounting traditions, where disclosure formats and formal definitions exist, it will be able to extract a large amount of items.

Section IV

Conclusion

Conclusions

- Disclosure standardization is required for populating financial databases reliably and at low cost
- Financial databases serve a wide variety of uses
- In a time EU and AS accounting traditions are clashing together, XBRL can be the new Global disclosure format
- Integrated taxonomy building has the potential to facilitate disclosure standardization
- Instance document creation should be possible without requiring companies to upgrade their reporting system

Thank you

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* The opinions expressed herewith are the responsibility of its authors and do not necessarily coincide with Banco de Portugal's.