

# IS YOUR DATA IN YOUR HANDS?

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HOW TO UNLOCK DATA  
IN YOUR OPERATIONAL AND ACCOUNTING SYSTEM  
WITH BUSINESS DATA STANDARDIZATION

# Table of Contents

The Problem .....3

    Do you know the one reason why it is so hard to get the data you need from your  
    own operational and accounting software? .....3

The Challenge.....5

    Moving From Unsustainable Processes To Sustainable Data .....6

    Business Data Standardization With XBRL .....9

    Converting Your Data Into Sustainable Data.....11

    Example 1 – Generation of Financial Statements from a Trial Balance.....13

    Example 2 – Creation of a KPI Dashboard.....17

Conclusions.....21

TERMS OF USE.....22

# THE PROBLEM

## DO YOU KNOW THE ONE REASON WHY IT IS SO HARD TO GET THE DATA YOU NEED FROM YOUR OWN OPERATIONAL AND ACCOUNTING SOFTWARE?

You know that the information is all there, because you run your day-to-day operations and accounting in that software, which serves its purpose just fine. And yet, when you need vital insight that helps you run your business better, or to generate a report for your management, or financial statements, or tax returns, the information always seems to come from a spreadsheet that you or somebody in your team must spend many hours creating.



Let's imagine that you have an important meeting with a client. You know you need 30 minutes to drive there, but you also know that you will have to beat rush hour traffic so you start driving two hours before the meeting. Sure enough, traffic strikes and although you know you will get to your meeting in time you cannot help thinking: why do I have to spend two hours of my valuable time for something that should only take 30 minutes? Who is going to pay for this time?



The answer is obvious – you will. And yet, you accept it as something unavoidable because your client only had a free slot for the meeting during rush hour, because you need to have that meeting to close a nice deal, and because an office downtown costs a lot of money and may create more problems than it solves. There is really not much choice.

And then your eye catches this red sign. An express lane that will get you straight from your office to downtown opens in three months.

Awesome! Suddenly the possibility of not wasting two hours of your valuable time instead of just 30 minutes becomes very real – you just need to get that Speed Pass.

So the question is, why didn't anybody come up with a Speed Pass for corporate data yet? Every organization needs an efficient, sustainable way to extract data from its own systems, and as a consequence meeting this expectation is one of the top priorities of any business software vendor. Yet, every organization finds itself in this same situation How is it possible?



# THE CHALLENGE

Every time you need a report, you are faced with the same choice: either you accept the implicit cost and the inefficiency of extracting the information from your own system manually, or you embark in a project to buy a new module, ask your software vendor for a customization, or replace the system altogether. These projects are very costly, and they also feel uncertain – after all, reporting, data monitoring, Key Performance Indicators (KPI) dashboards, and business intelligence were all features that you thought would be supported by your existing system when you acquired it. What if you invest additional money and resources, and then end up in the same situation after a while? That happens all the time. It happened to you.

Over time, organizations just accept the idea that although they have all the information they need in their systems, getting it out of there in a useful format is inefficient, and manual. Just like you accept the idea that driving to a meeting means spending a lot of extra idle time in your car. It is an unsustainable approach, but somehow looks unavoidable.



What about business software vendors though? Why do they all seem to struggle in providing efficient reporting, data monitoring, and business intelligence, at the risk of creating negative perceptions on their offering?

One could be malicious, and just point out that a business software vendor has all the interest in keeping the customer's data within their system, making it difficult to access outside of the system itself. This not only makes it harder for the client to switch to another software, but also makes it more difficult to deploy software

tools from other vendors to address these issues. It supports the vendor business model – it prompts customers to purchase additional modules of the information system that specifically address the kind of reporting that the customer needs. While these considerations may play some kind of role, they are certainly not the main driver.



The real issue is that business software applications hardcode the business logic necessary to support the requirements they were designed for into software code. This makes them rigid and difficult to change or enhance. Business requirements change and evolve rapidly, and outgrow hardcoded software very quickly. This is the no. 1 reason why business users do not find the support they need to do their job in the software applications used within their organizations. And it is also where the Speed Pass comes into play.

## MOVING FROM UNSUSTAINABLE PROCESSES TO SUSTAINABLE DATA

The answer is to stop looking for a solution in software, and get to the root of the problem instead: having your data in a known, accessible format, so that it can be easily manipulated and analyzed.

This concept is really not new; actually, in a way it is broadly used. When you create a spreadsheet and populate it with data from your accounting or operational system, what you are really doing is just that – transforming data from the proprietary format used in the application where it is stored to a format that you can work with. This approach has two issues:

1. The process of populating a spreadsheet is manual and error prone, and it is “one way” – once the data is in the spreadsheet, you cannot easily relate

it with its source, which makes it difficult to reconcile the result. In one word, it is a very inefficient process.

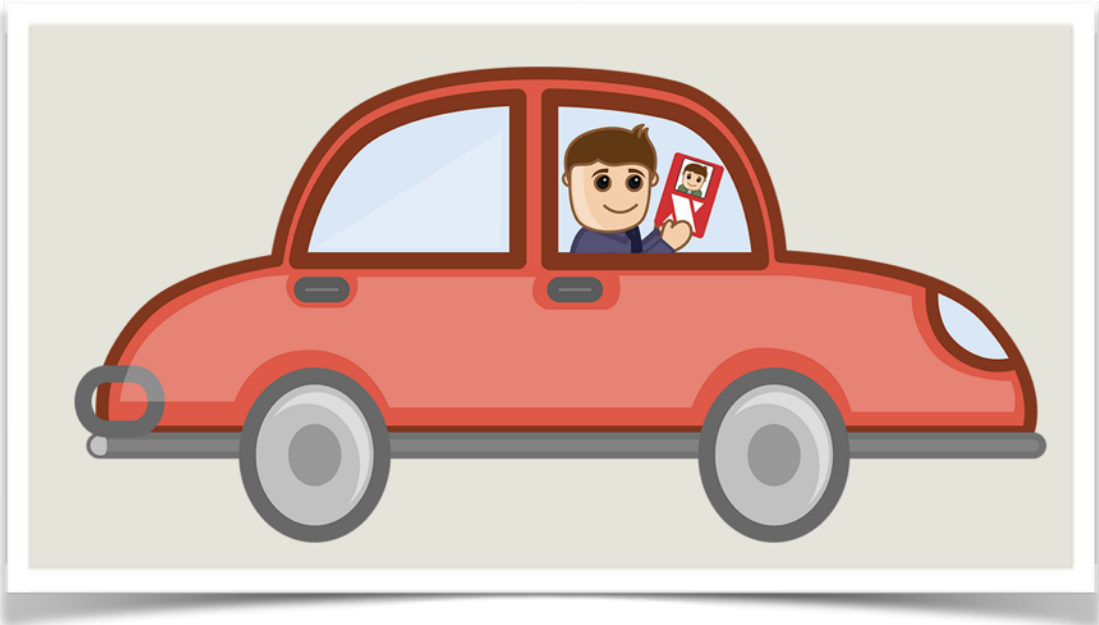
2. You define the format of the spreadsheet, as well as the formulas, filters, business logic and everything else necessary to process the data and get to the report or the KPIs that you are after. Chances are that many other organizations require the same or similar reports and KPIs, and everybody reinvents the same spreadsheets over and over again. While you get to the result that you want, you get it, again, in a very inefficient way. Just like when you depart two hours earlier for your meeting, over and over again.

Business data standardization takes this commonly used, but very inefficient process, one step further by leveraging a standardized data model optimized to represent business data, and the business logic typically necessary to work with it. It is like every organization used the same spreadsheets and could populate them automatically instead of manually – you can bet that the business logic built into them becomes better and better over time, and inexpensive, because it can be reused by different organizations and applied to a broad range of different purposes.



This does not work only for spreadsheets of course. Software can be designed to leverage a standardized data model instead of a proprietary one. This not only means the data is accessible, it also means that the business logic applied to it is not hardcoded, and software becomes flexible and adaptable to evolving business requirements. That's why standardizing business data generates Sustainable Data: Your data becomes accessible and easy to report, monitor, and analyze – it is truly in your hands.

Business data standardization is the Speed Pass to access data in your organization's operational and accounting software in an efficient, inexpensive way. Now let's see how that Pass actually works.





# BUSINESS DATA STANDARDIZATION WITH XBRL

While there are many data standards that address one aspect or the other in the business data domain, the Extensible Business Reporting Language (XBRL) is currently the only one that provides a comprehensive coverage of all the components necessary to support “after the fact” processes on business data, such as internal and external reporting, data monitoring, auditing and business intelligence. All these processes are part of the Business Reporting Supply Chain, defined as all the aggregations and transformations of business information that occur from the moment in which a transaction is recorded in an operational or accounting system to when that transaction and many others flow into the various forms of internal reporting mentioned so far, and are then aggregated in external reporting for regulatory, macroeconomic and policymaking purposes.

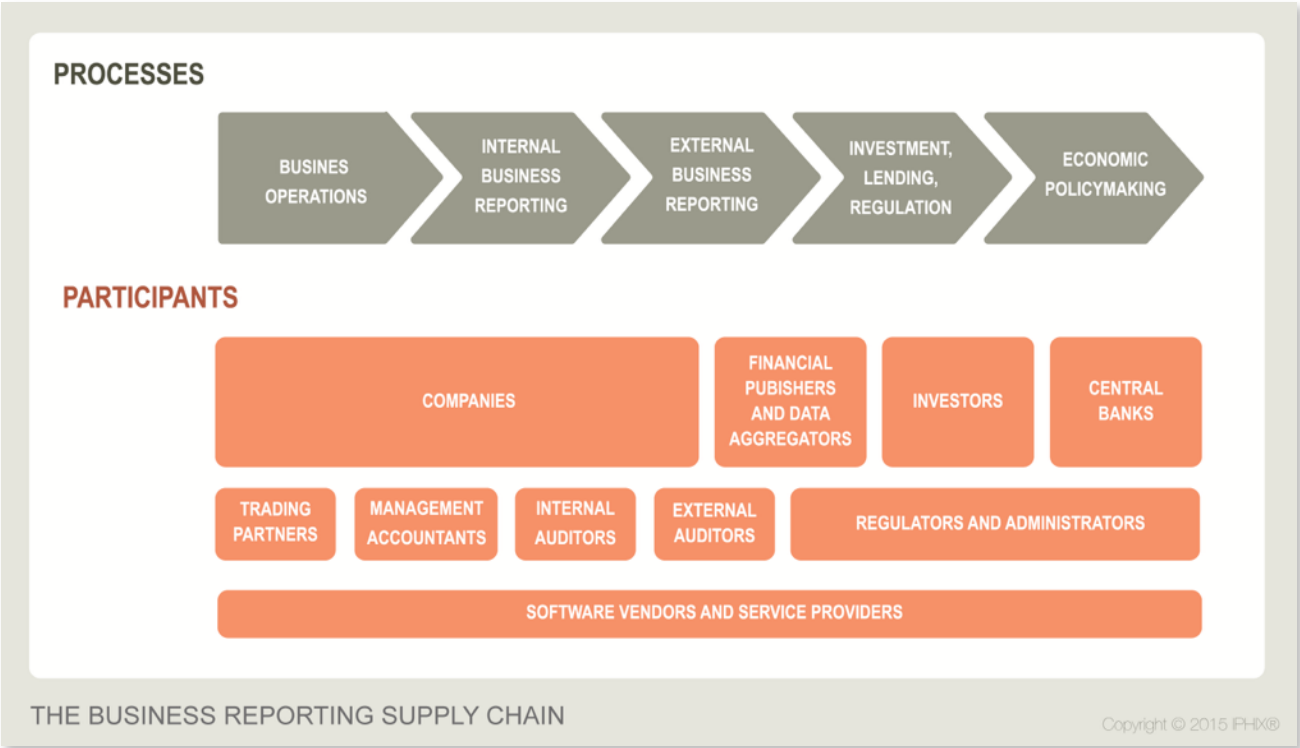


FIGURE 1

XBRL comprises two key components:

1. XBRL Global Ledger (XBRL GL) is a standardized format designed to represent detailed, transactional data as found in ERP systems, and accounting and operational software. It is basically a list of fields that describe common types of business information, such as documents, entries, parties, journals. This list is also optimized to represent all these types of information through a flexible and reusable structure.
2. XBRL for End Reporting (XBRL ER) is a flexible and very powerful way to represent aggregated reports, such as management reports, financial statements, tax returns, aggregated KPIs – pretty much any kind of reporting that you may want to extract from the information system of your organization.

Together, these two components support all processes within the Business Reporting Supply Chain.

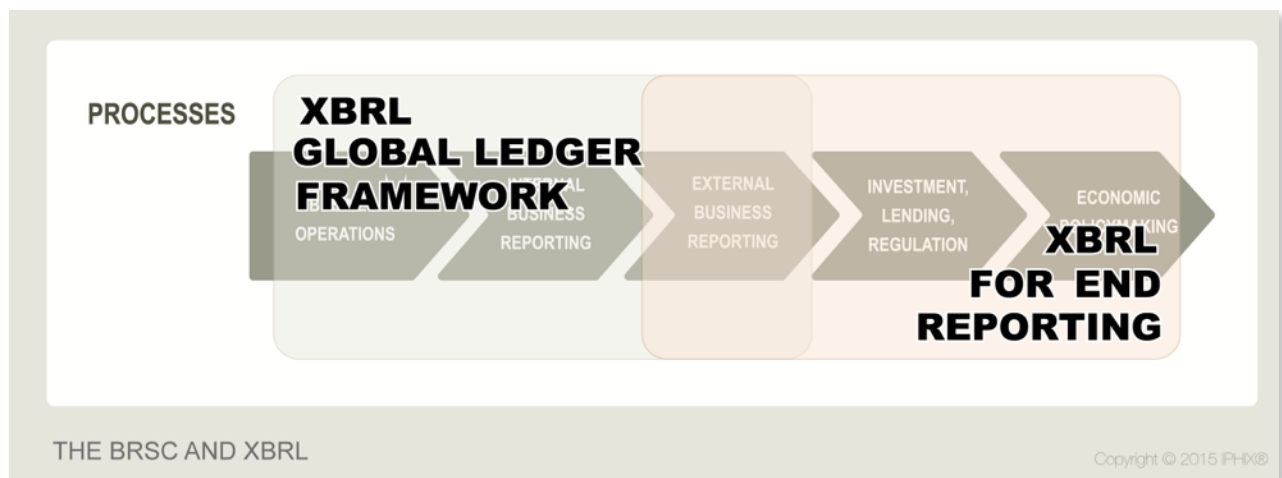


FIGURE 2

A complete analysis of XBRL GL and XBRL ER and how they work together to support each process within the BRSC is out of our scope for this document<sup>1</sup>. Below you will find two practical examples that illustrate how business data standardization unlocks data stored in an organization's information system, but before going there, let's quickly discuss how data can be standardized with XBRL – and transformed into Sustainable Data.



FIGURE 3

## CONVERTING YOUR DATA INTO SUSTAINABLE DATA

The first step towards Sustainable Data is to convert data from your accounting or operational software to XBRL – actually, to XBRL GL, which as discussed is the component of XBRL optimized to represent detailed/transactional data.

It is not necessary to convert all of your data; the level of granularity and detail required depends from the kind of process you want to support, the types of reports, the KPIs you are interested in, etc.

A simple mapping tool is all you need to perform this conversion. Chances are that your organization already has one available for other purposes, and if not, many

<sup>1</sup> To learn more about the XBRL standard, visit the XBRL International website [www.xbrl.org](http://www.xbrl.org).

vendors offer this kind of tools, which are typically very affordable. An enterprise-level mapping tool can be currently purchased for about US \$1,000.

Figure 4 shows a basic mapping from the table that stores trial balance data in a broadly used accounting software to XBRL GL.

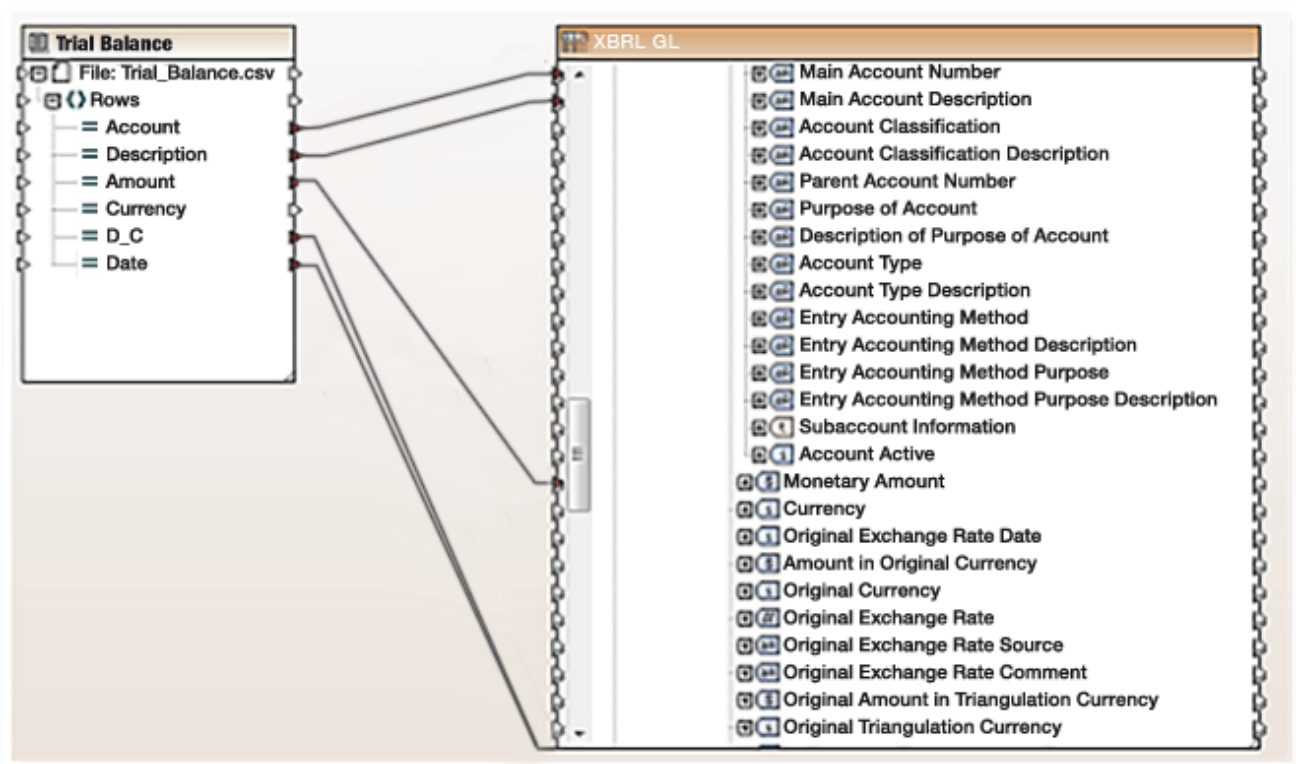


FIGURE 4

As you can see, the mapping basically consists of lines drawn between fields in the accounting software database and corresponding fields in XBRL GL. The simple mapping shown is the basis to support key activities such as the creation of financial statements or tax returns, the process of consolidation within a group of companies, a KPI Dashboard to monitor performance within an organization, and more.

Now that we have an idea of what is required to convert data to XBRL GL, let's have a look at two simple examples of how doing so transforms the way in which your organization's data is accessed, analyzed and presented.

These examples are based on the manual population of a spreadsheet structured to reproduce a fragment of XBRL GL, and on the processing of the data in the spreadsheet with a pivot table<sup>2</sup>. The objective is to explain the logic behind business data standardization and Sustainable Data with a practical demonstration based on a tool that most business users have at their disposal – Microsoft Excel.

## EXAMPLE 1 – GENERATION OF FINANCIAL STATEMENTS FROM A TRIAL BALANCE

The first example starts from the data used for the mapping in Figure 4: a trial balance with Account Code, Account Description, Amount, Debit/Credit, and Posting Date. You can create a spreadsheet with these 5 columns, and populate it with sample data or actual data from your organization. Each of the columns represents a field in XBRL GL.

	A	B	C	D	E
1	Account	Description	Amount	D/C	Date
2	1-101	Accounts receivable	1598	D	2014-12-31
3	1-102	Allowance for bad debts	-342	C	2014-12-31
4	1-412	Intangible assets	8000	D	2014-12-31
5	1-413	Accumulated amortization	-2674	C	2014-12-31
6	1-301	Other current assets	637	D	2014-12-31
7	1-407	Motor vehicles	23000	D	2014-12-31
8	1-401	Buildings	75000	D	2014-12-31
9	1-411	Land	50000	D	2014-12-31
10	1-403	Machinery and equipment	42000	D	2014-12-31
11	1-405	Furniture and fixtures	10000	D	2014-12-31
12	1-409	Depletable assets	5000	D	2014-12-31
13	1-408	A/D Motor vehicles	-16357	C	2014-12-31
14	1-402	A/D Buildings	-38657	C	2014-12-31
15	1-404	A/D Machinery and equipment	-32348	C	2014-12-31

FIGURE 5

<sup>2</sup>If you are not familiar with the use of pivot tables in Excel, there are a number of demos and tutorials available online.

What we have now is the XBRL GL representation of our trial balance. Now let's add a sixth column – Line Item, which is also a field in XBRL GL. Here we indicate the name of the line item in the financial statement where each account rolls up to.

	A	B	C	D	E	F
1	Account	Description	Amount	D/C	Date	Line Item
2	1-101	Accounts receivable	1598	D	2014-12-31	Current Trade Receivables
3	1-102	Allowance for bad debts	-342	C	2014-12-31	Trade And Other Current Receivables
4	1-412	Intangible assets	8000	D	2014-12-31	Intangible Assets Other Than Goodwill
5	1-413	Accumulated amortization	-2674	C	2014-12-31	Intangible Assets Other Than Goodwill
6	1-301	Other current assets	637	D	2014-12-31	Other Current Nonfinancial Assets
7	1-407	Motor vehicles	23000	D	2014-12-31	Motor Vehicles
8	1-401	Buildings	75000	D	2014-12-31	Buildings
9	1-411	Land	50000	D	2014-12-31	Land
10	1-403	Machinery and equipment	42000	D	2014-12-31	Property, Plant And Equipment
11	1-405	Furniture and fixtures	10000	D	2014-12-31	Property, Plant And Equipment
12	1-409	Depletable assets	5000	D	2014-12-31	Property, Plant And Equipment
13	1-408	A/D Motor vehicles	-16357	C	2014-12-31	Property, Plant And Equipment
14	1-402	A/D Buildings	-38657	C	2014-12-31	Property, Plant And Equipment
15	1-404	A/D Machinerv and equipment	-32348	C	2014-12-31	Property, Plant And Equipoment

FIGURE 6

The additional column is how XBRL ER comes into play. The financial statements are represented with an XBRL ER "taxonomy" – a list of fields organized in an appropriate structure to represent a specific report. Each line item in the spreadsheet is a field in the XBRL ER taxonomy used to represent the financial statements.

Now let's create a pivot table, with Column F – Line Items in Rows, and Column C – Amount in Values. With two clicks, we generated the financial statements.

	A	B	C
3	<b>Sum of Amount</b>	<b>Column Labels</b> ▼	
4	<b>Row Labels</b>	▼ <b>2014-12-31</b>	<b>Grand Total</b>
5	Buildings	75000	75000
6	Current Trade Receivables	1598	1598
7	Intangible Assets Other Than Goodwill	5326	5326
8	Land	50000	50000
9	Motor Vehicles	23000	23000
10	Other Current Nonfinancial Assets	637	637
11	Property, Plant And Equipment	-30362	-30362
12	Trade And Other Current Receivables	-342	-342
13	(blank)	233077	233077
14	<b>Grand Total</b>	<b>357934</b>	<b>357934</b>

FIGURE 7

With one additional click we can add Column B – Description to the Rows in the pivot table, and drill down to the detail of each line item by account.

	A	B
3	<b>Sum of Amount</b>	<b>Column Labels</b> ▼
4	<b>Row Labels</b>	▼ <b>2014-12-31</b>
5	▼ <b>Buildings</b>	<b>75000</b>
6	Buildings	75000
7	▼ <b>Current Trade Receivables</b>	<b>1598</b>
8	Accounts receivable	1598
9	▼ <b>Intangible Assets Other Than Goodwill</b>	<b>5326</b>
10	Accumulated amortization	-2674
11	Intangible assets	8000
12	▼ <b>Land</b>	<b>50000</b>
13	Land	50000
14	▼ <b>Motor Vehicles</b>	<b>23000</b>
15	Motor vehicles	23000
16	▼ <b>Other Current Nonfinancial Assets</b>	<b>637</b>
17	Other current assets	637
18	▼ <b>Property, Plant And Equipment</b>	<b>-30362</b>
19	A/D Buildings	-38657
20	A/D Machinery and equipment	-32348
21	A/D Motor vehicles	-16357
22	Depletable assets	5000
23	Furniture and fixtures	10000

FIGURE 8

Obviously, the generation of financial statements is much more complex. A lot of additional information comes into play, such as eliminations, multi-currency operations, adjustments, and more. XBRL GL includes fields and structures to represent all the necessary information, so we could have created an example that covered all that.

But the real objective of this example is to show how easy it becomes to generate a meaningful report, once the relevant information is represented in a known format – the same, standardized format no matter in what accounting software the trial balance was created. And the same applies to non-accounting information – as we discussed, operational software can be mapped to XBRL GL as well.



## EXAMPLE 2 – CREATION OF A KPI DASHBOARD

Let's consider a completely different report – a KPI Dashboard designed to monitor certain aspects of the activity in your organization.

In this case, the detail data used to derive the KPI Dashboard may come in part from the trial balance and in part from other sources, such as the operational modules of the information system, depending on what KPIs are included in the dashboard.

Let's say that your organization provides services, and that the KPIs that you want to track are Revenues and Hours Billed. The information is available in your billing system. Again, you create a spreadsheet with the relevant information, and again each column represents a field in XBRL GL – actually, most of the fields are the same that we used in the previous example.

	A	B	C	D	E	F
1	Client	Description	Item	Amount	Invoice	Date
2	1100	Moogle Milk	Total Billed	2000.00	201534	2015-01-20
3	1100	Moogle Milk	Total Billed	247.00	201525	2015-01-20
4	1734	ACME Inc.	Total Billed	1547.00	201546	2015-01-20
5	2178	IPHIX	Total Billed	12894.00	201598	2015-01-20
6	1100	Moogle Milk	Total Billed	5876.00	201531	2015-01-20
7	2178	IPHIX	Total Billed	387.00	201597	2015-01-20
8	1734	ACME Inc.	Total Billed	26.00	201556	2015-01-20
9	1734	ACME Inc.	Total Billed	1368.00	201523	2015-01-20
10	3288	Zarathustra Ltd.	Total Billed	320.00	201543	2015-01-20
11	1100	Moogle Milk	Hours	15.00	201534	2015-01-20
12	1100	Moogle Milk	Hours	2.00	201525	2015-01-20
13	1734	ACME Inc.	Hours	17.00	201546	2015-01-20
14	2178	IPHIX	Hours	365.00	201598	2015-01-20
15	1100	Moogle Milk	Hours	41.00	201531	2015-01-20
16	2178	IPHIX	Hours	3.00	201597	2015-01-20
17	1734	ACME Inc.	Hours	2.00	201556	2015-01-20
18	1734	ACME Inc.	Hours	18.00	201523	2015-01-20
19	3288	Zarathustra Ltd.	Hours	7.00	201543	2015-01-20

FIGURE 9

This time, the additional column that we will add represents the KPIs that you want to track, again represented with an XBRL ER taxonomy.

	A	B	C	D	E	F	G
1	Client	Description	Item	Amount	Invoice	Date	KPI
2	1100	Moogle Milk	Total Billed	2000.00	201534	2015-01-20	Revenues
3	1100	Moogle Milk	Total Billed	247.00	201525	2015-01-20	Revenues
4	1734	ACME Inc.	Total Billed	1547.00	201546	2015-01-20	Revenues
5	2178	IPHIX	Total Billed	12894.00	201598	2015-01-20	Revenues
6	1100	Moogle Milk	Total Billed	5876.00	201531	2015-01-20	Revenues
7	2178	IPHIX	Total Billed	387.00	201597	2015-01-20	Revenues
8	1734	ACME Inc.	Total Billed	26.00	201556	2015-01-20	Revenues
9	1734	ACME Inc.	Total Billed	1368.00	201523	2015-01-20	Revenues
10	3288	Zarathustra Ltd.	Total Billed	320.00	201543	2015-01-20	Revenues
11	1100	Moogle Milk	Hours	15.00	201534	2015-01-20	Hours Billed
12	1100	Moogle Milk	Hours	2.00	201525	2015-01-20	Hours Billed
13	1734	ACME Inc.	Hours	17.00	201546	2015-01-20	Hours Billed
14	2178	IPHIX	Hours	365.00	201598	2015-01-20	Hours Billed
15	1100	Moogle Milk	Hours	41.00	201531	2015-01-20	Hours Billed
16	2178	IPHIX	Hours	3.00	201597	2015-01-20	Hours Billed
17	1734	ACME Inc.	Hours	2.00	201556	2015-01-20	Hours Billed
18	1734	ACME Inc.	Hours	18.00	201523	2015-01-20	Hours Billed
19	3288	Zarathustra Ltd.	Hours	7.00	201543	2015-01-20	Hours Billed

FIGURE 10

Let's create the pivot table, with Column G – KPI in Rows, and Column D – Amount in Values. With two clicks, we generated the KPI Dashboard.

	A	B	C
1			
2			
3	<b>Sum of Amount</b>	<b>Column Labels</b>	
4	<b>Row Labels</b>	<b>2015-01-20</b>	<b>Grand Total</b>
5	Hours Billed	470	470
6	Revenues	24665	24665
7	<b>Grand Total</b>	<b>25135</b>	<b>25135</b>

FIGURE 11

We can now add Column B – Description to the Rows in the pivot table, and drill down to the detail of each KPI by Client.

	A	B
1		
2		
3	<b>Sum of Amount</b>	<b>Column Labels</b> ▾
4	<b>Row Labels</b>	▾ 2015-01-20
5	▾ <b>Hours Billed</b>	<b>470</b>
6	ACME Inc.	37
7	IPHIX	368
8	Moogle Milk	58
9	Zarathustra Ltd.	7
10	▾ <b>Revenues</b>	<b>24665</b>
11	ACME Inc.	2941
12	IPHIX	13281
13	Moogle Milk	8123
14	Zarathustra Ltd.	320
15	<b>Grand Total</b>	<b>25135</b>

FIGURE 12

Financial statements and KPI dashboards could not be more different in nature. But both examples are based on a clear pattern, very common when reporting and analyzing business data: summary information derived from some kind of underlying detail. Because XBRL standardizes the structure that supports this basic summary/detail pattern, we are able to create two pivot tables based on very different information with exactly the same 3 clicks of the mouse on the same XBRL GL fields:

- The field that represents the summary element that we want to generate or analyze – the financial statement line item. or the KPI – for Rows.
- The field that represents the amount – the balance of the account, or the value billed/no. of hours – for Values.
- The field that represents the “drill down” – trial balance accounts, or Client – for the additional Rows detail.

It is now clear why software applications designed to understand and process business data standards are so flexible, efficient, and inexpensive at the same time: if a user can generate two very different reports with the same 3 mouse clicks just by gaining a superficial working knowledge of the standard, creating software that can do the same automatically is equally easy.

The summary/detail pattern is a common and very important one in business data. There are others, and they can all be standardized with XBRL.

In a real implementation, the population of the information in the two examples provided would of course not be manual; the mapping tool would perform it automatically. There would also be a user interface designed and optimized for XBRL visualization and processing. But an Excel based demonstration that everybody can understand without the filter of specialized software tools is very powerful. It demonstrates that business data standardization transforms business data access, validation, analysis and presentation in reports into a mouse click activity.

The technology that supports the use of standardized business data is inexpensive because it is applicable to any organization, in any sector or industry. It applies to a broad range of use cases, on which organizations typically spend a lot of money and resources. And it addresses efficiently the difficulties in accessing, reporting on and analyzing business data created by business logic rigidly hardcoded in software applications.

We encourage you to explore the information and the resources in the [IPHIX](#) web site, and in particular the tools and services that [IPHIX](#) offers to leverage Sustainable Data – such as our signature [Three Easy Steps](#) package, that includes all the technology, the consulting services, and the knowledge transfer necessary to successfully complete your first Sustainable Data project.

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