

## 4. Foundation for Understanding

This section provides information foundational to understanding digital financial information. If these ideas are not understood, then trying to understand why digital financial reporting will replace the current financial reporting paradigm could not possibly be understood.

The following is a summary of ideas, concepts, and terminology you will need to understand in order to undertake the important journey of understanding model-based digital financial reporting. This section is intended to help you fill in any gaps you might have in your ability to grasp the true nature of digital financial reporting. Not understanding this information will leave gaps in your ability to fully grasp what needs to be understood.

### 4.1. *Interactive data*

The SEC coined the term “interactive data”. Most business users have used or at least seen a Microsoft Excel pivot table. A pivot table is interactive, or dynamic, in that it can be pivoted to display information in different configurations.

Imagine a financial report, such as a financial statement, which is interactive or has the dynamic characteristics of an Excel pivot table. That is what a model-based digital financial report will be like. Digital financial reports can be made interactive, or dynamic, because of the nature of XBRL. You can jump from one place in a report to another because the report is really thousands of individual structures which are understood by software and the software can leverage that structure. You can reorganize the information to suit your preferences, desires, goals, and information needs. You can search, sort, filter, reconfigure the financial report.

How does this ability to reorganize a financial statement impact how a financial statement is, or should be, created and how does it impact how the reader of the financial statement interacts with the report? There is a connection between creation and use.

A model-based digital financial report or financial filing is much more like an Excel pivot table than a piece of paper or an electronic piece of paper such as PDF or HTML. As such, accountants creating such financial statements may need to look at what they are creating differently, adjusting for the characteristics of this new medium. With the positive characteristics offered by XBRL, potentially negative characteristics also show their face and if not properly managed can have undesired affects.

HINT: Take a look at the video on this web page titled “The Basics of Quantrix Modeler”: <http://goo.gl/qQ4Hx> This video will help you understand the difference between logical models and semantic models.

### 4.2. *Unstructured versus structured information*

Simply put, digital information comes in two forms:

- **Unstructured** which means the information contains no identifiable structure and therefore it is unrecognizable and therefore not usable by computer software. Further, no controlled navigation within the pieces of the unstructured information is possible due to its lack of structure.



- **Structured** which means the information has identifiable structure which can be recognized and utilized by computer software. Further, because of the structure navigation within the pieces of structured information is possible because of the structure.

Structuring information enables computer software applications to leverage that structure and work with the information.

Some people believe that there is another category “semi-structured” information. For more information this white paper is helpful:

<http://goo.gl/TwUbs>

Truth be known, everything that a computer works with has to be structured at some level and the level of structure determines what a computer can do with that digital information. The type of structure determines what you can, and cannot, do with that information.

### ***4.3. Structured for presentation versus structured for meaning***

There are basically two manners or methods or protocols to structuring information digitally:

- **Structured for presentation.** An example of that is a Word processor document which is structured using headings, sub headings, paragraphs, tables and lists. An Excel spreadsheet is also an example of structuring for presentation, it uses worksheets, columns, rows, and cells. Or an HTML document is structured for presentation.
- **Structured for meaning.** An example of that is database or a taxonomy or other type of classification system. A database structures the presentation into rows and columns, but the rows and columns are associated with defined names which are contained in the database schema which have specific meaning.

XBRL structures information for meaning. That structured meaning can be used to help a business user make use of that information.

### ***4.4. Differentiating syntax and semantics***

Often confused are the two parts of structured information. Both parts are important, but for different reasons:

- **Syntax** describes the form of the information and is generally not relevant to a business person. This is syntax: <Name>John Doe</Name>. Syntax is important to technical people.
- **Semantics** communicates the meaning of the information. For example, “the director’s name is John Doe” communicates meaning as does “the balance sheet balances”. Both are semantics of the information. Business meaning is key to the digital world.

Syntax can be thought of as “how you say something”. Semantics can be thought of as “the meaning behind what you said.” The following two videos explain and differentiate syntax and semantics:

How XBRL Works: <http://www.youtube.com/watch?v=nATJBPOiTxM>



This video about semantics: <http://www.youtube.com/watch?v=OGg8A2zfWKg>

Business users need to work with the meaning of information, not the syntax. Software applications build to interact with something like the XBRL technical syntax effectively force business users, if they want to user that software, to work with the XBRL technical syntax. If a higher level semantic model is employed to effective mask the technical syntax exposing business users to a higher level semantic model, complex things become easier for business users.

## 4.5. Interoperability

When trying to establish a formal system for exchanging information of any type, one needs to understand that there are three aspects to business system to business system interoperability (per this HL7 video, see <http://www.hl7.org/documentcenter/public/training/IntroToHL7/player.html>):

- **Technical interoperability:** Physically moving information from business system "A" to business system "B".
- **Semantic interoperability:** Insuring that business system "A" and business system "B" understand the information in the same way.
- **Workflow interoperability:** Enabling business processes at the organization housing business system "A" to effectively work with business processes at the organization housing business system "B".

Achieving interoperability will result in new cost effective, easy to use, robust, reliable, repeatable, predictable, scalable, secure, auditable, business information exchange across business systems. Some business systems might be internal to your organization, others might be external to your organization.

## 4.6. Metadata

How you divide up your information does matter. Providing the proper "handles" or ways of accessing the components within a set of information is important.

In the digital world, metadata is important. You probably don't understand what metadata is but metadata is going to change your life, it already has. Metadata is simply data about data, it is used when computers communicate with one another. Metadata is one of the things which makes XBRL work. You need to understand how to make use of this metadata to express and control financial information.

Many people like to have debates about what is data and what is metadata but the debate is pointless. Just think of metadata as data at another level.

Another way to think about metadata is this: Metadata is good; more metadata is better; standard metadata is even better! Basically, the more that a computer understands something the more that the computer can do for you. Metadata helps computers understand how you want to work with your data.

The bottom line is this. Metadata is data and metadata is important.

The book *Everything is Miscellaneous* explains "the third order of order":

- **First order of order.** Putting books on shelves is an example the first order of order.



- **Second order of order.** Creating a list of books on the shelves you have is an example of second order of order. This can be done on paper or it can be done in a database.
- **Third order of order.** Adding even more information to information is an example of third order of order. Using the book example, classifying books by genre, best sellers, featured books, bargain books, books which one of your friends has read; basically there are countless ways to organize something.

Third order removes the limitations which people seem to assume exist when it comes to organizing information. Weinberger (the author of *Everything is Miscellaneous*) says this about the third order of order:

“In fact, the third-order practices that make a company's existing assets more profitable, increase customer loyalty, and seriously reduce costs are the Trojan horse of the information age. As we all get used to them, third-order practices undermine some of our most deeply ingrained ways of thinking about the world and our knowledge of it.”

Metadata has strategic implications.

Financial reporting has boatloads and boatloads of metadata, far more metadata than is included in the US GAAP Taxonomy. The following wiki contains example metadata expressed using RDF/OWL which relates to financial reporting:

<http://digitalfinancialreporting.wikispaces.com/home>

<http://www.xbrlsite.com/US-GAAP-2011/Exemplars/Viewer.html>

One would think that the FASB and IASB could prove that their conceptual framework by articulating it using RDF/OWL, UML or some other modeling language. Certainly some of that could and should be done using XBRL. Also, because financial reporting is becoming so complex, using a modeling language can help improve communications.

The only thing better than metadata is more metadata. David Weinberger's book *Everything is Miscellaneous* points out two important things about classification systems:

- That every classification scheme ever devised inherently reflects the biases of those that constructed the classification system.
- The role metadata plays in allowing you to create your own custom classification system so you can have the view of something that you want.

As we move from "atoms" to "bits", people drag along the rules which apply to atoms and try to apply those rules to solve problems in the world of bits. This, of course, does not work. *Everything is Miscellaneous* has countless examples contrasting the physical organization of atoms (such as books in a book store) and the organization of books digitally (like Amazon.com).

#### **4.7. Notion of logical model**

We have all worked with electronic spread sheets. They are easy to use because the software interface which you work with exposes you to familiar terms similar to paper spread sheets. Things like workbooks, spread sheets, rows, columns, and cells are recognizable and organized into a logical model which we understand.



XBRL is a technical syntax. The XBRL technical syntax is implemented by the US GAAP taxonomy using a specific architecture or application profile. This application profile is laid out in the US GAAP Taxonomy Architecture. That architecture exposes a logical model. You may not be able to see that logical model because the US GAAP taxonomy actually hides the model by being inconsistent. But the logical model is there.

#### 4.8. *Notion of semantic model*

While logical models have their benefits, they still leave something missing: business meaning. Semantics is meaning as we pointed out above. Working with digital financial reports which relate to some specific business domain such as financial reporting and an SEC XBRL financial filing at the semantic level you deal with terms such as: balance sheet, income statement, assets, liabilities, equity, subsequent events, nonmonetary transactions, etc.

A semantic model provides an order of magnitude jump in usability over using a logical model. Eventually, this is how you will be working with XBRL; via a semantic model.

HINT: Take a look at the video on this web page titled "The Basics of Quantrix Modeler": <http://goo.gl/qQ4Hx> This video will help you understand the difference between logical models and semantic models.

#### 4.9. *Business information is inherently dimensional*

Business information, and particularly financial information, is inherently multidimensional. To understand what dimensional or multidimensional means and to understand why this is important, consider the following brief explanation:

- A **value** such as the numeric value for  $\pi$  is a **scalar**. The value of  $\pi$  which is 3.14 is the same, no matter where it is used. Scalars have no dimensions or other characteristics, they stand alone.
- A **list** can be thought of as having one dimension. Dimensions are a model for expressing characteristics of information. Dimensions effectively contextualized for unambiguous interpretation. For example, the name of a company and its state of incorporation can be thought of as a list.
- A **table** can be thought of as having two dimensions; one dimension represented by the columns of the table, the other by the rows of a table. Other terms used for table are matrix and array.
- A **cube** can be thought of as a three dimensional matrix/array. For example, think of the "x", the "y" and the "z" axis of a three dimensional chart you may have worked with.
- A **hypercube** is an " $n$ -dimensional" matrix/array, meaning that it can have from one to any number of dimensions. Hypercubes can be hard to articulate in two dimensions, such as paper. But computers are good at working with hypercubes. You can think of a pivot table data as a hypercube.

The fundamental building block of the multidimensional model is the hypercube. A hypercube is a set of dimensions used to represent information.

Walking through this in another way, consider the number 1,000. What does that number mean? What if we told you that the number related to Cash and Cash



Equivalents for the current fiscal period of December 31, 2010, reported by the consolidated entity which has the SEC CIK number 0123456789 whose value is \$1,000,000 reported in thousands of US Dollars. Each of those descriptive characteristics of the number 1,000 is a different dimension of that number.

In order for financial information to be usable the information must be unambiguous to be interpreted appropriately.

The multidimensional model is simply a logical model for organizing information. The multidimensional model is flexible in that it does not specify presentation information related to the information expressed by the model. Presentation of that information is a different problem than unambiguously expressing the information. Users of the model are free to present the information as they deem appropriate, leveraging the dimensional information or other helpful information. What the multidimensional model does provide is enough agreement to express information so that it can be unambiguously understood by a computer software application, including applications which can render the financial information in a format appropriate for human consumption.

#### **4.10. Role of software**

Complexity can never be removed from a process but it can be moved. Software can assume the complexity of things like the XBRL technical syntax by leveraging things like a logical model or a semantic model. Software can leverage ideas such as the multidimensional model in pursuit of that task.

Software can turn the complex physical implementation of technology into a significantly easier to use logical model and/or semantic model; hiding and taking care of the complexity of the technology for the user in the background. Most software today which tries to help business users make use of XBRL is still maturing and does not leverage a logical model or semantic model; therefore they have to work at the level of the XBRL technical syntax. Software will mature and move to a more semantic approach, hiding the technical syntax from business users.

#### **4.11. Semantic, structured authoring**

The benefits of a model-based, digital, semantic, structured authoring approach over the unstructured approach used today to create financial reports such as financial statements, such as packing financial information into Microsoft Word which understands nothing about financial reporting, seem quite clear and obvious; if you understand the technologies employed to achieve the goal.

Even if you are not required to create your financial reports or financial reports using this type of an approach by a regulator or someone else, a semantic, structure authoring is beneficial. Model-based digital financial reporting is a semantic, structured authoring approach.

Structured authoring of documents has been around for quite a long time. Pharmaceutical companies and airplane manufactures have used the structured general mark-up language (SGML) for quite some time. The appearance of XML based authoring tools made structured authoring even more used. Structured authoring is maturing, becoming more cost effective for smaller companies, and becoming more broadly used.



There are others taking a structured authoring approach to creating financial statements. SAP, Oracle, and IBM to name three. All of these companies are working to change the "last mile of finance" as are others. Many of these companies started down this path long before XBRL even existed. Disclosure management software is replacing Microsoft Word for creating financial reports.

There are lots of different terms for structured authoring: model based reporting, digital financial reporting, 21st Century financial reporting.

Semantic, structured authoring is defined:

"to compose information content semantically structured according to some ontology"

The paper *Semantic Authoring and Learning Thereof* by Kôiti Hasida talks about semantic structured authoring in more detail. It points out how this approach can be more productive and improve quality. This paper can be found here:

<http://kushmerick.org/nick/research/Dagstuhl-MLSW/proceedings/hasida.pdf>

Semantic structured authoring is a marriage between ideas of structured authoring and ideas of the semantic web. Add to this business intelligence, then you see financial reports such as financial statements and financial reporting practiced in new ways.



## **4.12. Understanding the multidimensional model**

The multidimensional model is a model used to represent information. Other popular models for representing information include the relational model and hierarchical model. There are other models. Each models has its strengths and weaknesses, it pros and cons.

Multidimensional views of information provide what many people refer to as the ability to “slice and dice” information. Another way of stating this is that the multidimensional model provides flexible access to information.

People often confuse the multidimensional model with OLAP (online analytical processing), BI (business intelligence) and other such implementations of the multidimensional model.

Transaction processing systems such as accounting systems tend to use the relational model or a relational database management system (RDBMS).

Data warehouses or sometimes called data marts is an approach to creating an enterprise wide data store. A data warehouse basically helps tie transaction processing systems together so the data can be access as if it were one set. Business intelligence systems are used to report information to those who use that information. But data warehouses and business intelligence software tends to be focused on the internal use of information within one organization. Much information which one might use can be external to an organization.

As we said, each of these models has its pros (strengths) and cons (weaknesses); each has different needs. Business information comes from these different systems and goes into these different systems.

Yet there is no one standard multidimensional model used by all systems which use that model. The relational model has SQL (structured query language) and ODBC (open database connectivity). Connecting systems which use the multidimensional model can be more challenging. A white paper which discusses these issues can be found here:

[http://www.symcorp.com/downloads/ADAPT\\_white\\_paper.pdf](http://www.symcorp.com/downloads/ADAPT_white_paper.pdf)

This section helps sheds light on why the multidimensional model is used, it separates the multidimensional model, OLAP, BI, and XBRL Dimensions

### **4.12.1. Strength of the multidimensional model**

The greatest strength of the multidimensional model is the flexibility it provides to slice and dice and otherwise reformat information to fit the preference of the consumer of the information. Relational databases can be made to express information using a multidimensional type of an approach using fact tables, star schemas to mimic the multidimensional model, but a multidimensional database is optimized for the multidimensional model.

### **4.12.2. Strength of the OLAP**

OLAP (On-Line Analytical Processing) is an approach to swiftly answer a query.

OLAP and the multidimensional model are two different things. OLAP uses the multidimensional model to achieve its goals. OLAP tends to focus on numbers only, is optimized to enable the aggregation of information. Also, OLAP sometimes even pre-aggregates numbers to make queries faster. Further, OLAP is for providing



information, it is not generally “read-write”. OLAP tends to be less useful with reporting textual type information and in situations where you do not want aggregation.

OLAP tends to be internally focused within an entity and not that adept at working with information which is external to an entity.

You can think of OLAP as if it were a three dimensional spreadsheet (or more precisely an “N” dimensional spreadsheet meaning any number of dimensions). This is called an OLAP cube. An Excel pivot table is a very basic example of an OLAP cube.

For more information on OLAP see:

[http://www.ischool.drexel.edu/faculty/song/courses/info607/tutorial\\_OLAP/index.htm](http://www.ischool.drexel.edu/faculty/song/courses/info607/tutorial_OLAP/index.htm)

#### **4.12.3. Business intelligence systems**

Business intelligence (BI) is a type of decision support system which transforms and organizes raw information and transforms that information so that it can be used to make business decisions. BI systems are organized to present information in such a way as to guide a business toward some desired goal.

BI systems tend to use OLAP and therefore likewise tend to use the multidimensional model. BI systems are implemented within software. The following link provides information about BI systems implemented by software vendors:

<http://biscorecard.com/>

BI systems have pros and cons:

- There is no one global standard BI system or one standard multidimensional model used by BI systems. As such, BI systems are not generally interoperable. They can be made to interoperate, but they are not inherently interoperable. BI systems tend to work well with the internal information of an enterprise, but less well with information external to an enterprise.
- BI systems generally use OLAP. And as such they have the strengths and limitations of OLAP. As such, BI systems tend to work best with numbers and tend to force you to aggregate numbers.
- BI systems tend to be read only, you can use information from a BI system but you cannot put information into a BI system. Generally, BI information is put into a transaction processing system which then goes into a data warehouse which the BI system then uses.
- BI systems focus on numbers and work with numbers extremely well; however they work less well with textual type information or narratives.
- BI systems don't tend to allow you to import schemas or other metadata which is used to work with the information, the tools tend to provide you mechanisms within the tools to create this metadata.

Two of these limitations are critically important when it comes to XBRL. The first is that BI applications tend to focus more on numbers, rather than text and numbers and therefore BI systems are limited in working with XBRL information which can contain both numbers and text. The second is that BI systems tend to focus on numbers and like to help you aggregate those numbers because that is what OLAP does and in XBRL reports you don't want aggregation many times.



For example, if you ever tried to use an Excel pivot table which is basically a simple BI-type tool, you can see how a pivot table cannot quite do what you want to do in terms of rendering financial reporting information which has been expressed in XBRL.

A third important thing to realize is that BI system don't tend to provide easy ways to import metadata such as the information which is contained within an XBRL taxonomy which provides the schema for information contained within an XBRL instance.

BI systems are quite useful, but they need to go to the next level. Currently, BI systems seem to be focused on internal analytics within an organization or many times within a department of an organization which cannot work with the internal analytics of systems within the same organization. BI needs to be more externally oriented, bringing in information from whatever source, from whatever entity, internal or external.

**4.12.4. Model based reporting and the multidimensional model**

Model-based reporting is catching on in the financial reporting space. Enterprise software vendors such as IBM (IBM Cognos Financial Statement Reporting (FSR) External Reporting), SAP (SAP BusinessObjects Disclosure Management), and Oracle (Oracle Hyperion Disclosure Management) have model-based reporting software applications which support the creation of financial statements. Financial reporting can be seen as leading the way in model-based reporting.

But many other software companies are jumping into the model-based financial reporting arena.

Two companies which I will mention here are Quatrix and A3 Modeling because they have great videos which help understand what model-based financial reporting looks like. Here are those videos:

Quatrix Modeler: <http://www.quatrix.com/tour/Concepts2.htm>

A3 Modeling: [http://www.a3solutions.com/media/A3\\_SpreadsheetAutomation\\_preso.html](http://www.a3solutions.com/media/A3_SpreadsheetAutomation_preso.html)

Although, many of these model-based financial reporting solutions are tied too tightly to OLAP which means they are focused on numbers and not both numbers and textual information such as narratives found in financial reports.

**4.12.5. Reconciling multidimensional terminology**

The multidimensional model terminology associate with it. Unfortunately, there is not one standard, precise set of terms that everyone agrees on. But most models are fairly close. Symmetry Corp, a business intelligence consulting firm, has created a common model that it uses to reconcile all the different multidimensional model terminology used by the major software vendors they support. You can see this reconciliation here:

[http://www.symcorp.com/downloads/ADAPT\\_white\\_paper.pdf](http://www.symcorp.com/downloads/ADAPT_white_paper.pdf)

XBRL Dimensions terminology is yet another variation of multidimensional terminology. The US GAAP Taxonomy uses yet another set of terms in an attempt to make the multidimensional model easier for business users to make use of. The table below provides a reconciliation between this terminology:

Common BI or Multidimensional Model Term	XBRL Dimensions Term	US GAAP Term	Description
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Common BI or Multidimensional Model Term	XBRL Dimensions Term	US GAAP Term	Description
Scalar			Data that has no dimensions. For example, the value for pi (3.14) has no dimensions.
Cube, data cube, hypercube, pivot table, array, matrix, info cube	Hypercube	[Table]	Connection between a set of dimensions.
Dimension, characteristic, measure, axis	Dimension	[Axis]	A characteristic of the information. For example, "Geographic Area" may be a characteristic of the information and therefore a dimension.
Domain	Domain	[Domain]	Set of members of a dimension.
Member	Member	[Member]	A possible values of a dimension. For example, "Asia", "Europe", "North America", "South America" might be members of the "Geographic Area" dimension.
Measure	Primary item	[Line Items], Concept	Generally, in XBRL terms, the XBRL taxonomy concept dimension of information. For example the taxonomy concept "Sales" may be a primary item. NOTE: In BI, concepts are simply another dimension.
	Network	[Network]	Hypercubes exist within XBRL networks. A network may have one or more hypercubes within it. Networks are a way of physically separating sets of relations.
Navigational attribute, Flow		Number and category of network	Order or sequence of hypercubes
Fact, key figure	Fact	Fact	A fact is reported piece of information which could be numeric, non-numeric (i.e. strings), or narrative (i.e. TextBlock).
Fact table			Set of facts associated with a hypercube
Slice			A portion of a hypercube, somewhat like a filter, which allows information with more than two dimensions to be presented on a two-dimensional surface.
Formatting information, display attributes		Presentation relations	Information related to formatting, presenting, and/or rendering information from a hypercube.

If you are confused as to what a term means, the table above can be helpful in figuring out the definition of the term.

### **4.13. XBRL is only one of many digital financial report technical syntaxes**

There are numerous technical syntaxes which are being used today to express financial information digitally and there will likely be many others.

- XBRL (Extensible Business Reporting Language), <http://www.xbrl.org>
- W3C Government Linked Data, [http://www.w3.org/2011/gld/wiki/Main\\_Page](http://www.w3.org/2011/gld/wiki/Main_Page)
- W3C Linked Data, <http://www.w3.org/standards/semanticweb/data>
- Various forms of RDF, <http://www.w3.org/RDF/> and OWL, <http://www.w3.org/OWL>
- Various forms of XML, <http://www.w3.org/XML>

One of the most popular technical syntaxes is XBRL.

This document describes how to leverage XBRL for a model-based, semantic, global standard approach to digital financial reporting.

Information provided in this document is based on over ten years of working with XBRL and the information is grounded in empirical evidence and provides practical information for creating cost-effective, scalable, secure, auditable, robust, reliable,



predictable, safe, easy to use systems which work correctly to meet the needs of business.

The bottom line is that digital financial reports need to be better, faster, and cheaper than existing approaches or business users will never use them.

Information in this document is not intended for the average business user who will make use of digital financial reports, although they would stand to benefit. The information is more for those upon with the average business user relies for advice and understanding who will help the average business user get what they need from digital financial reports. As software improves more and more information in this document will become obsolete, complexity being absorbed by software applications. However, many accountants and particularly auditors need to have a more in depth grasp of how digital financial reporting works.

Also, this information is useful for the accounting profession as a whole as it endeavours to understand how to best employ these digital mediums for financial reporting.

While the information in this document focuses specifically on XBRL, much of the information is applicable to using any technical syntax to express business information digitally.

In addition, this document helps your jumpstart your expertise by packing the result of thousands of hours of testing and experimentation into a concise package of knowledge useful to technical experts implementing XBRL within software applications for intended for business users, technical and business teams tasked with defining an architecture to implement a system for digital financial reporting using a modelling-based approach, or those trying to make use of XBRL based information, or those using other technical syntaxes such as those mentioned above.

Finally, while this document is focused on financial reporting these same ideas can be employed for any sort of digital financial reporting.

#### ***4.14. Business system to business system information exchange***

When we think of financial reporting on usually thinks of word processor documents or electronic spreadsheets exchanged between business users. But financial reporting is actually much broader in scope than these work processor documents and electronic spreadsheets.

Many times the word processor documents or electronic spreadsheets end up being "cut and pasted" into other documents, spreadsheets, or systems. One case in point is how information from a financial statement is many times put into the system of a bank, regulator, or analyst to reuse that financial information in some manner many times over many years.

For contrast, look at the other end of the spectrum and what many people refer to as transactions. Be these accounting transactions or operating system transactions, transactions tend to be smaller in nature, while the information within the transaction may change, the form of the transaction generally does not change. While transactions are not considered model-based digital financial reports, the difference between these two offer an opportunity to understand the difference between the two.



Model-based digital financial reporting allows for formal agreement and therefore the opportunity to automate financial information exchanges of many types. While this approach is not generally appropriate for high volume, small, unchanging transactions; it does offer an opportunity to automate a number of information exchanges used within a business. The “sweet spot” of model-based digital financial reporting can be articulated as:

- **Larger transactions** which tend to change (i.e. such as a 50 or 100 page regulatory report with perhaps thousands of facts exchanged, as opposed to a small transaction with 10 data points)
- **Ad hoc exchanges** which seem to appear, all one needs to do is look at the electronic spreadsheets which you exchange today.
- **Business people changing the metadata**, no IT involvement required.
- **Information which needs to be reconfigured**, rather than a “form” (i.e. financial reports are not a form)
- **Zero tolerance for errors** in the information (i.e. everything must tick and tie and if things don't add up, bad things happen)

