

# 1. Facts

The purpose of this section is to explain the notion of rules and how rules are used to in the representation of XBRL-based digital financial reports.

## 1.1. Introduction to Facts

Facts are statements about the numbers and words that are provided by an economic entity within a business report. For example, the financial report might state “assets for the consolidated legal entity Microsoft as of June 20, 2017 was \$241,086,000,000 expressed in US dollars and rounded to the nearest millions of dollars.

A fact is a single, observable, reportable piece of information contained within a financial report.

## 1.2. Understanding Facts

A **scalar** is a fact which has no distinguishing characteristics; it stands on its own. For example, the value of the fact pi is a scalar, the fact value of pi never changes; it always has the same value for everyone. (Pi or  $\pi$  is the ratio of a circle's circumference to its diameter and always has the value of equal to 3.14).

Fact Value
3.14

A business **report**<sup>1</sup> communicates information in the form of numbers and words. A **fact**<sup>2</sup> defines a single, observable, reportable piece of information contained within a business report and has a **fact value**<sup>3</sup> contextualized for unambiguous interpretation or analysis by one or more distinguishing aspects. For example, below are two facts with the values of “2,000” and “1,000”. However, the two facts above are not contextualized, the facts have no aspects.

Fact Value
2,000
1,000

An **aspect**<sup>4</sup> (a.k.a. characteristic) describes a fact. An aspect is a property of a fact which provides information necessary to describe the fact or distinguish one fact from another fact within a report. For example, below you see the concept aspect of the numbers “2,000” and “1,000” which relates to the concepts “Revenues” and “Net income” respectively:

<sup>1</sup> Report, <http://www.xbrlsite.com/2020/Theory/Terms/Report.html>

<sup>2</sup> Fact, <http://www.xbrlsite.com/2020/Theory/Terms/Fact.html>

<sup>3</sup> Fact Value, <http://www.xbrlsite.com/2020/Theory/Terms/FactValue.html>

<sup>4</sup> Aspect, <http://www.xbrlsite.com/2020/Theory/Terms/Aspect.html>

Concept Aspect	Fact Value
Revenues	2,000
Net income	1,000

To more fully describe a fact, you need more than just one aspect. A fact must always provide three **core aspects**<sup>5</sup>: *reporting entity* that reported the fact, *calendar period* of the reported fact, and the *concept* that describes the reported fact. Below you see two facts which are characterized by three core aspects which are used to differentiate the two facts from one another.

Reporting Entity Aspect	Calendar Period Aspect	Concept Aspect	Fact Value
ABC Company	Jan 1, 2019 to Dec 31, 2019	Revenues	2,000
ABC Company	Jan 1, 2019 to Dec 31, 2019	Net income	1,000

In addition to the core aspects that you always must use, creators of reports can also provide additional **noncore aspects**<sup>6</sup>. A noncore aspect is simply some additional aspect that is created to further distinguish facts beyond the capabilities of the three core aspects. Below you see the noncore aspect “Legal Entity Aspect” has been added to the two facts we have been working with:

Reporting Entity Aspect	Legal Entity Aspect	Calendar Period Aspect	Concept Aspect	Fact Value
ABC Company	Consolidated entity	Jan 1, 2019 to Dec 31, 2019	Revenues	2,000
ABC Company	Consolidated entity	Jan 1, 2019 to Dec 31, 2019	Net income	1,000

Fact values can be **numeric**<sup>7</sup> or **nonnumeric**<sup>8</sup>. Numeric fact values require additional information to describe the units of the numeric fact and the rounding that is used to report the numeric fact. **Units**<sup>9</sup> and **rounding**<sup>10</sup> are properties of the fact value that provide information necessary to describe numeric fact values. Below you see that the units of “US Dollars” and that the rounding of the fact value is “Thousands of dollars”:

Reporting Entity Aspect	Legal Entity Aspect	Calendar Period Aspect	Concept Aspect	Fact Value	Units	Rounding
ABC Company	Consolidated entity	Jan 1, 2019 to Dec 31, 2019	Revenues	2,000	US Dollars	Thousands of dollars
ABC Company	Consolidated entity	Jan 1, 2019 to Dec 31, 2019	Net income	1,000	US Dollars	Thousands of dollars

To summarize where we are thus far and to be crystal clear; below you see one fact. That single fact is characterized by a set of four aspects. The numeric fact value is

<sup>5</sup> Core Aspect, <http://www.xbrlsite.com/2020/Theory/Terms/CoreAspect.html>

<sup>6</sup> Noncore Aspect, <http://www.xbrlsite.com/2020/Theory/Terms/NoncoreAspect.html>

<sup>7</sup> Numeric Fact Value, <http://www.xbrlsite.com/2020/Theory/Terms/NumericFactValue.html>

<sup>8</sup> Nonnumeric Fact Value, <http://www.xbrlsite.com/2020/Theory/Terms/NonnumericFactValue.html>

<sup>9</sup> Units, <http://www.xbrlsite.com/2020/Theory/Terms/Units.html>

<sup>10</sup> Rounding, <http://www.xbrlsite.com/2020/Theory/Terms/Rounding.html>

described as having units of “US Dollars” and that the fact value is rounded to the nearest “Thousands of dollars”.

Reporting Entity Aspect	Legal Entity Aspect	Calendar Period Aspect	Concept Aspect	Fact Value	Units	Rounding
ABC Company	Consolidated entity	Jan 1, 2019 to Dec 31, 2019	Revenues	2,000	US Dollars	Thousands of dollars

A **fact set**<sup>11</sup> is a set of facts which go together (tend to be cohesive and share a certain common nature) for some specific purpose within a business report. Synonyms for fact set are block and fact table. Below you see three facts that make up a fact set that are used to describe the breakdown of revenues by geographic area. Those three facts make up a fact set.

Reporting Entity Aspect	Legal Entity Aspect	Geographic Area Aspect	Calendar Period Aspect	Concept Aspect	Fact Value	Units	Rounding
ABC Company	Consolidated entity	All Geographic Areas Combined	Jan 1, 2019 to Dec 31, 2019	Revenues	2,000	US Dollars	Thousands of dollars
ABC Company	Consolidated entity	North America	Jan 1, 2019 to Dec 31, 2019	Revenues	1,000	US Dollars	Thousands of dollars
ABC Company	Consolidated entity	South America	Jan 1, 2019 to Dec 31, 2019	Revenues	1,000	US Dollars	Thousands of dollars

**Rules**<sup>12</sup> guide, control, suggest, or influence behavior. Rules cause things to happen, prevent things from happening, or suggest that it might be a good idea if something did or did not happen. Rules help shape judgment, help make decisions, help evaluate, help shape behavior.

Don't make the mistake of thinking that rules are completely inflexible and that you cannot break rules. Sure, maybe there are some rules that can never be broken. Maybe there are some rules that you can break. It helps to think of breaking rules as penalties in a football game. The point is that the guidance, control, suggestions, and influence offered by rules are a choice of business professionals. The meaning of a rule is separate from the level of enforcement someone might apply to the rule.

A rule states a fact about the world, the logical system. A synonym for rule is assertion.

So, considering our fact set below we know that the value “2,000” is for the concept “Revenues”, for the period “Jan 1, 2019 to Dec 31, 2019”, relates to the legal entity “Consolidated entity”, of the reporting entity “ABC Company” and is the total of all “Geographic Areas”. “North America” and “South America” are part of the *whole* “All Geographic Areas Combined”. A rule that expresses that relationship might be expressed as:

“All Geographic Areas Combined = North America + South America”.

Rules both describe and can be used to verify that reported facts are consistent with the provided description provided by the rule. There are many different types of rules including mathematical, structural, mechanical, logical, and accounting related rules.

<sup>11</sup> Fact Set, <http://www.xbrlsite.com/2020/Theory/Terms/FactSet.html>

<sup>12</sup> Rule, <http://www.xbrlsite.com/2020/Theory/Terms/Rule.html>

Reporting Entity Aspect	Legal Entity Aspect	Geographic Area Aspect	Calendar Period Aspect	Concept Aspect	Fact Value	Units	Rounding
ABC Company	Consolidated entity	All Geographic Areas Combined	Jan 1, 2019 to Dec 31, 2019	Revenues	2,000	US Dollars	Thousands of dollars
ABC Company	Consolidated entity	North America	Jan 1, 2019 to Dec 31, 2019	Revenues	1,000	US Dollars	Thousands of dollars
ABC Company	Consolidated entity	South America	Jan 1, 2019 to Dec 31, 2019	Revenues	1,000	US Dollars	Thousands of dollars

**Grain**<sup>13</sup> is the level of depth of information or granularity. For example, the lowest level of granularity is the actual transaction, event, circumstance, or other phenomenon represented as the actual transaction within an accounting system. The highest level of granularity is the summarized information that is represented as a line item of perhaps a financial statement, say the income statement. Other levels of granularity can exist between the highest and lowest levels.

Considering the fact set you see below the fact outlined in red is one level of granularity as contrast to the other two facts that are outlined in green which provides the same information as is provided by the fact outlined in red, but at a different level of granularity.

Reporting Entity Aspect	Legal Entity Aspect	Geographic Area Aspect	Calendar Period Aspect	Concept Aspect	Fact Value	Units	Rounding
ABC Company	Consolidated entity	All Geographic Areas Combined	Jan 1, 2019 to Dec 31, 2019	Revenues	2,000	US Dollars	Thousands of dollars
ABC Company	Consolidated entity	North America	Jan 1, 2019 to Dec 31, 2019	Revenues	1,000	US Dollars	Thousands of dollars
ABC Company	Consolidated entity	South America	Jan 1, 2019 to Dec 31, 2019	Revenues	1,000	US Dollars	Thousands of dollars

The facts in a fact set forms a **fragment**<sup>14</sup> of the report. A report can have one or many fragments. A fragment is a type of *structure*. For example, a “balance sheet” is a structure or the “long term debt maturities” disclosure is a structure.

### 1.3. Interface for Entering Facts

The following is an interface for working with facts:

<sup>13</sup> Grain, <http://www.xbrlsite.com/2020/Theory/Terms/Grain.html>

<sup>14</sup> Fragment, <http://www.xbrlsite.com/2020/Theory/Terms/Fragment.html>

**Edit row** [X]

ReportingEntityAspect: GH259400TOMPUOLS65II | <http://standards.iso.org/iso/17442> [v]

CalendarPeriodAspect: 2019-12-31 [v]

Concept: sfac6:Assets [v]

FactValue: 0 [v]

Units: United States Dollar [v]

Rounding: INF [v]

FactID: [ ]

Sequence: 1 [ ]

[Edit dimensions] [Edit parentheticals]

[Save] [Cancel]

### 1.3.1.Aspects (a.k.a. Dimensions)

Aspects (a.k.a. Dimensions) are properties of a fact. A fact has core aspects (ReportingEntityAspect, CalendarPeriodAspect, and ConceptAspect) and then any number of noncore aspects can be added to a fact. This is an interface for adding aspects to a fact:

Concept: cfac:Assets

Sequence: 1

**Edit dimensions** [X]

Dimension: [ ] [v]

Member: [ ] [v] [trash icon]

+ Add dimension

Save

### 1.3.2. Parenthetical Explanations

A parenthetical explanation is a property of a fact. A fact can have ZERO to many parenthetical explanations. Parenthetical explanations are physically implemented using XBRL footnotes.