ETIM International

The international classification standard for technical products

The essence of Product Information Management

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1. Introduction

Why is it important to manage your product information? What do you gain by it, and what are the risks if you don't? Who is reponsible for product information and who needs it? In this lesson we will dive into the essence of product information management.

2. Why sharing product information is important

Product Life Cycle and Building Life Cycle are out of Sync

In today's world, evolution of technology is happening at warp speed. As a result, technical products come and go and are adapted to latest technological advancements. On average, 20% of any business' product assortment is subject to change on a yearly basis. Meanwhile, projects used in the construction of houses, buildings and manufacturing plants, including its technical installations, may have lead times that sometimes surpass multiple years.

If you look at the supply chain within the construction and installation industry, there are millions of different products going through a highly developed and mature logistical supply chain. These products are manufactured and traded by a large number of companies, ranging from small local stores to large international conglomerates, all working together to supply all the products and materials to a construction site on time, and for the right price.

High quality, validated product data is key in business' success

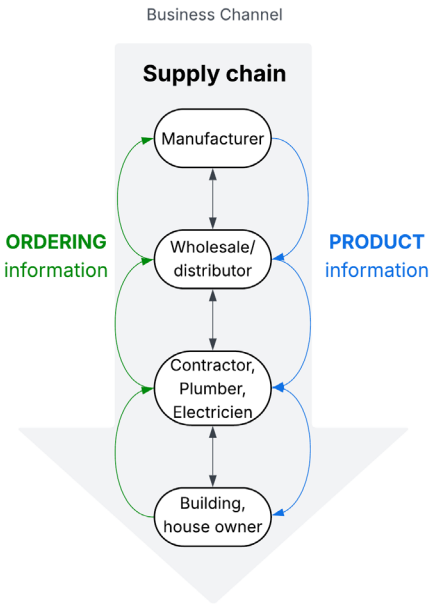
As long as the right product is ordered for the right job, everything's fine. However, the reality is a bit different. The lack of high quality, highly detailed and validated product data is one of the root causes of failure costs and inefficiency in the industry. Businesses ordering the wrong product is the main cause for projects to stall, technical installations to underperform, possible inflicted damage because of it, and eventually... the cause for construction and installation work to be redone. If lucky, the error gets detected in time. But even then, products are sent back, while new products being sent with a dispatch service.

All these issues result in negotiations on who is responsible and liable and after that results in all the administrative and logistical work on processing credit notes, taking products back in stock. And don't forget the transport costs of shipping products back and forth while they could have been avoided.

These costs sometimes lead to
double digit percentages
of the total project costs.

Product data precedes business transactions: it takes clean and accurate product data to make a sale

In technical markets, sharing product data down the supply chain is a pre-requisite for shipping goods down the supply chain. That is very logical, right? Because how is anyone supposed to know what to buy, if they don't know what their business partners are selling? And in technical industries, our greatest worry is to know if the product that we are looking to buy meets the technical requirements that are specified to complete the job at hand. A simple order code, product description and price will not be sufficient to make a proper selection.



3. The challenges when product data is shared across business channels

Within your own company you can setup product data structures for your own internal needs. But it quickly becomes an uncontrollable mess when you are sharing this product data with others, or if you rely on others to send you the product data you need.

As a wholesaler, installer or contractor, all collaborating in a single construction project, product information is sometimes collected from hundreds of suppliers. When they would like to use it to find the right product that is fit for your requirements, they run into all sorts of Babylonian confusion of tongues:

Differences in languages

When you sell products in your market while you buy products produced in a different market

Differences in Units of measurement

Data like for instance dimensions can be given in centimetres from one supplier, while the other uses millimetres. Or worse: your foreign supplier uses inches, because in many local markets the imperial system is still used over metric system.

Differences in referred technical standards

In some regions, different technical standards are used to measure dimensions, weights, power usage, load bearing or curing times. This will give a nuance on the meaning of that data, making it hard to compare it between specific suppliers. [image of apple is not a pear]

Differences in semantics – using the right name of things

Is it a vessel, a tank or a container? Engineers and craftsmen and women sometimes use different names for the same products. Also, regional preferences can lead to different names for the same thing. When names can differ, meanings can differ too. An anchor can be used to keep a ship in one place, or to secure a bolt into a wall. Same name, but totally different things.

When doing business within technical industries, all the millions of products that are being bought and sold, need a name that describes the product, its use and its particular characteristics compared to other products. Products can be referred to as materials, but is every product a material? Or are products made from material? And characteristics also can be called properties or features.

Differences in digital structures and formats

While one company uses software that imports and exports data in an EXCEL or CSV format, other companies use software that needs an XML format or JSON format. And on top of that, the identifiers of every bit of data can be different. “Item-nr”, “OderCode” or “Product_ID” can all refer to the same bit of information, used in different systems.

Differences in timing of product data updates

An often used saying around marketeers in technical industries is: “ a product catalogue has become outdated once it is delivered from the printer”. With today’s time to market becoming shorter and shorter that is absolutely true. Rapidly changing product programmes require faster and more regular updates of product data. However, when you update your product data on your end, that does not automatically mean that your business partners have done the same, at the same time.

Moving from printed materials to digital workflows may enable you to react faster and more cost effective, but it still does not guarantee that your new version of your digitally available product data has been imported in the system of all your customers down the business channel.

4. Product information management as a solution

Companies are increasingly acknowledging their responsibility to improve their product information management. Their solution is to implement software to centralize product data into a “single source of truth”, creating order out of chaos.

This is a great step forward, if managed properly. What happens next is that they are allocating resources for:

Manually inserting data

Retyping data from a webpage or PDF file into your new PIM or MDM system.

Manually converting data

In order to import data from other systems, staff members are restructuring data from one file format to another, renaming data fields, recalculating data to preferred units of measurement.

Manually validating data

Running checks on missing data, contacting suppliers to verify the validity of data.

All this activity is still subject to human error and contains a lot of inefficiency.

The idea behind the “Single source of truth” gets a different meaning when you realize that you are importing, manipulating, converting, validating product information from your suppliers, who perhaps also acknowledge their responsibility to improve the quality of product information.

This is the moment where it becomes important to look at who is responsible for this single source.

Single source of truth within a business channel.

If you want to make sure that your Product Information Management is adding value to your business, you need to understand who owns what part of product data.

Product information can be broken down into two sections, which can have different owners:

Type of product information	Common name	Owned by	Typical examples
Product basic information	Product data	Manufacturer	Product no. (GTIN) Brand – series – type descriptions ETIM classification Product features Certification Images Manuals
Tradable item information	Trade item data	The selling organisation	Item no. (GTIN) Leadtime Stock positions Pricing and discounts Packaging data

Be aware that down the business channel, the same product can have multiple Trade item data records: from the manufacturer as well as from various wholesalers all selling the same product through their stores.

When you understand this, there are three important scenarios to consider:

1) **You are manufacturing a product. (supplier)**

   In this case you need to understand the importance of the product information that originates from your company, and the amount of control you would like to have on your business partners in the business channel that re-use your product data.
   You will need to supply not only the physical product, but also its information. You could call it a digital twin or virtual product or a digital product passport. In the end, it is the product information that belongs to the physical product.

2) **You are buying and selling a product, manufactured by someone else (wholesale)**

   In this case you will want the supplier to take responsibility as the single source of truth for the Product data maintenance. For a smooth purchasing process, you also rely heavily on their responsibility for providing you with their trade item data.
   The trade item data of your own selling side is of course your own responsibility.

3) **You are buying a product, to be used in construction- and installation work**

   In this case you will want the supplier to take responsibility as the single source of truth for the Product data maintenance.
   For a smooth purchasing process, you also rely heavily on the selling party's responsibility for providing you the suppliers product data and their own trade item data.

What ever scenario might be fit for your business, most important takeaway here is that there is a strong need for sharing product information across businesses, to synchronize and update all centralized product information management systems. Product data exchange is the key to make Product Information Management systems (PIM/MDM) work, using the single source of truth within a business channel.

5. Standardisation as a solution

To bring down the number of issues concerning inaccurate obsolete data, a goal would be to automate the flow of product data and trade item date through business channels.

Every developer knows this: to make automation of product data work, you need to make human information interoperable between computer systems. Machine readable is a common terminology to describe this.

To make product data machine readable, without any ambiguity, standardisation is needed in terms of the exchange file format, generic product and trade item data field descriptions and you will need a classification system with product class features that are specific to certain types of products.

ETIM international currently maintains and develops the following standards:

ETIM Product Classification

A standardised model for product classes and its list of features.

ETIM Modelling classification

A standardised model for product geometry classes and its list of geometrical sizes.

ETIM xChange

A standardized file format for product information exchange that includes product data, trade item info, as well as ETIM classification data.

ETIM International's mission is to provide these standards to the public, as open standards, free to use by anyone, anywhere in the world.