

Expert Group

Product Information Management

Improve your product information management

Takeaways

1. Personalization increases the number of links between products for cross-selling and upselling, as well as adding to the number of product features (e.g., in the case of different styles, demographic characteristics, or personal features).
2. The quality standards for product data are extremely high, and this quality can be greatly boosted by a high-performance PIM solution.
3. A high-performance PIM system is about more than high-quality product data alone, with other key factors including a strong corporate vision, a well-organized governance structure, and clear communication.

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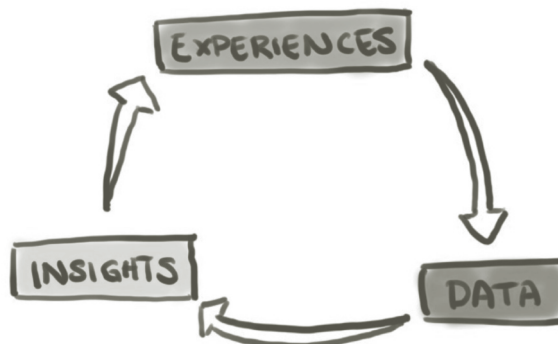
Squadra
The Digital Transformation Network

The Added Value of Personalization and HPP

In managing large amounts of product information, many companies have already recognized the usefulness and necessity of a product information management system (PIM system). This type of system is extremely valuable to businesses, as it provides a central repository containing accurate and reliable information about all products and/or services. The question is what you need to do to be able to quickly adapt to all sorts of new trends, including personalization of the product range. You also need to consider that having invested in a PIM system does not guarantee it will be used successfully, and figure out what makes a PIM solution into a high-performance PIM solution. These two questions serve as the basis for this blue paper. We will start by addressing the topic of personalization, after which we will take a more in-depth look at the latest trends and highlight two use cases. Next, we will focus on the subject of high-performance PIM systems and explore the most effective ways of implementing these systems.

1. PIM and Personalization

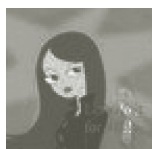
Personalization ensures that online content (including product information) is adapted to the customer, depending on variables such as age, sex, location, and personal preferences. The purpose of personalization is to improve customer experience in order to increase the likelihood of purchase and, by extension, boost sales. This is an ongoing process, as you can see in the image below.



The continuous process of data processing¹

¹ ERICA SMIT IN HACKER NOON

It is not just customers who come with their own set of characteristics – so does the product. Motivation (necessity or desire), price, purchasing frequency, how the product is used, and the probability of repeat purchases are all features inherent to the product. Of course, it is important to consider the type of product and the probability that people will buy it more frequently (see the example of Amazon customer Jac Rayner below).



Jac Rayner@GirlFromBlupo

Dear Amazon, I bought a toilet seat because I needed one. Necessity, not desire. I do not collect them. I am not a toilet seat addict. No matter how temptingly you email me, I'm not going to think, oh go on then, just one more toilet seat, I'll treat myself.

Intelligent personalization is based not only on what needs to be personalized, but also on how this should be done. Netflix, for example, adapted the artwork used to promote its content based on viewers' preferences for specific genres. Another example is drawn from the travel industry. For the sale of cheap flights to families with children, airlines use different pictures than when marketing to older, childless couples. Artificial intelligence (AI) is often used to keep improving personalized recommendations. For example, take customers who are looking online for a pair of shoes to go with an evening dress – AI can help to suggest the best matches to customers.

1.1 What is the relationship between PIM and personalization?

Virtually all online players will be using personalization in the coming years, so as to be even more relevant to their online customers. How will this affect PIM, how can this be modeled on a flexible basis, and what additional content does this require?

One key new addition is that product features are used online but are not always published (e.g., motivation, purchasing frequency and likelihood of a repeat purchase). The amount of product information will also increase as product features (including photographs and descriptions) have multiple versions relating to specific styles, regional differences (e.g., submarine sandwiches are also known as “hoagies” and “heroes” in various parts of the United States, just as Midwesterners call soda “pop”), or personal features. We also note that the number of links between products for cross-selling and upselling is set to increase sharply. The use of personalization raises data quality standards, to the point where erroneous advice (active) as a result of a flawed product feature has a bigger impact than an inaccurate piece of information (product feature) on a product page (passive). This also results in changing requirements for the data management department, with a growing demand for people with analytical skills. The department's role is becoming more important within the organization and has more similarities with other departments. Finally, personalization also sets requirements for the flexibility of PIM systems, and there will be a need for greater integration with, among other things, *customer data platforms* and *machine-learning engines*.

Case: Personalization in Retail

TCK Sports Group is one of the largest independent distributors in the sports and outdoor industry in the Benelux region. The practical case of TCK provides fascinating insights into the relationship between PIM and personalization.

Technology

Several sports retailers across Europe use the Feetbox 3D Scanner developed by German manufacturer Sidas. While the underlying technology of the scanner was developed way back in 2000, it only began to be widely used only in recent years. The technology involves a pressure plate and a camera that turns around the foot, which makes a scan of both feet with pinpoint accuracy. The scanner's software is designed to visualize the foot analysis made by the scanner in a comprehensible manner, so that this can be discussed with the consumer. The scan is then stored in a "foot passport," along with several other relevant details. This is subsequently stored in a secure cloud environment and should ideally be linked to the retailer's CRM system and, by extension, the consumer's loyalty card. This makes this data always easily retrievable on devices other than only the scanner itself.

Product Information Requirements

In addition, the scanning software contains a database of all widely available ski boots, hiking shoes, and cycling shoes (the insole measurements of which have been scanned as well) and all specifications for this footwear. In fact, this is therefore a standalone PIM system that is linked to the retailer's PIM system, which makes it easy to assess which shoe is right for the customer's foot and usage. By using filters from the system (including the person's sex, usage habits, and level of athletic ability) and linking this to the customer's data, the software comes up with three options that are likely to be most compatible with the consumer. The customer and the sales assistant then make a choice together. Registering this choice of the consumer also ensures that the advice algorithm becomes smarter all the time, as the subjective element is also included in this algorithm. The newest-generation scanner is currently used by more than 500 retailers, while more than 700,000 feet were scanned and the software contains a database of more than 6,000 scanned shoe models.

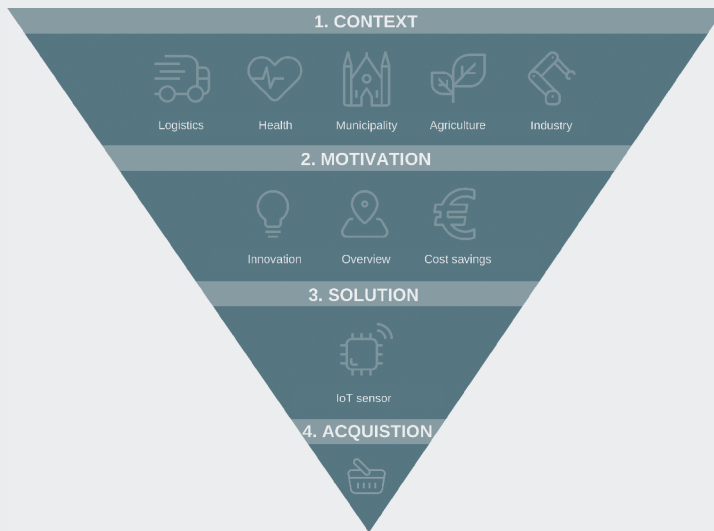
Use

The system of linking the customers' foot passports to their other customer data can also be used to offer the customer a personalized experience online. An API integrated into the retailer's PIM system makes it possible not only to present the customer with their perfect size in the online store, but also to make a pre-selection of the shoes that are the best fit for their boottree and other personal features. When they click a specific shoe, customers see a virtual try-on animation in which the foot is projected in the shoe in question, including an indication of the closeness of the match. Customers can also select a different size, after which the virtual try-on is repeated for that size. Apart from the personalized experience, which clearly boosts customer satisfaction, this also significantly reduces the product return rate.

Another important usage is personalized communication with the customer. For example, you have the option to organize mailings in such a way that customers are only contacted about products that are relevant to them, so that an email announcing a closeout sale contains only products that actually suit their style or meet their needs.

Case: Personalization in the Telecommunications Market

KPN is one of the largest network providers in the Netherlands, which goes beyond just connecting people by telephone or through television. The use of smart products such as Internet of Things sensors is becoming more widespread, both in the B2B and consumer markets. IoT sensors are small electronic devices that convert data from the “real” world into data into the digital domain. One example is smart cities, where the waste containers in the streets indicate when they are full, which makes it possible to develop an efficient route. KPN has personalized the online environment, so that consumers only see the sensors that are relevant to their particular situation.



The personalization funnel of KPN's IoT sensors

Product Information Requirements

In order to monitor consistency of the products advertised on the website, it is important to display identical information. The following information is relevant to the sale of IoT sensors (list is not exhaustive): dimensions, color, battery life, function (i.e., measurement of temperature, humidity, location, and angle determination) and network (LoRa, LTE-M, and M2M). Examples: you want to know a car's location in real time, whereas the location of a waste container on a building site only needs to be updated a few times a day.

Personalization

For the sale of IoT sensors, KPN provides website visitors with a personalized experience, even if they don't create an account. This is done by letting customers make certain choices: customers state in what industry they operate (e.g., agriculture, rental, or urban safety) and what their interests are (e.g., innovation, cost savings, or sustainability). The customer's profile is then created on this basis; this makes it possible to edit the information and make it more specific as the customer spends more time on the website, creating the freedom to display customer cases that match the choices made. This gives the customer a personalized experience, where relevant search criteria and intuitive pages are essential.

Analysis tools for search behavior and cookies (anonymity is guaranteed) can subsequently be used to refine the customer's profile based on data regarding their demographics, sex, age, device, and hours/times of the day. This makes it possible to further tailor the context to the customer (a process known as "tailoring").

This personalization involves first determining the context (e.g., the industry) in order to only display the sensors that are relevant to the customer. A sensor can therefore be presented with the same basic product information in a number of ways, but using other images and/or usage options.

2. High-Performance PIM

With many companies having already implemented a PIM system, the expert group reflected this year on the foundation of PIM: how can PIM contribute to corporate objectives, what are the conditions set, and how can this be measured quantitatively and qualitatively? All participants shared their knowledge and experiences and created a list of the main elements of a high-performance PIM system. This led to the conclusion that the following three elements are essential: the organization around PIM, the PIM foundation, and management and continuity.

2.1 The Organization around PIM

Data Governance and MDM Organization

It is essential for any organization to have a vision, strategy, and business owner for product data. This is regarded by everyone as the primary and main condition for capitalizing on PIM's added value. In addition, the roles, responsibilities, and escalation channels for PIM need to be properly implemented and integrated into an (often wider) master data management organization (MDM organization). This responsibility is best allocated to a customer-focused or operational department that reports directly to the management board. In other words: an effective data governance structure is essential to PIM's success.

Note that the MDM (and PIM) organization may be structured differently depending on how the business organization is set up. Key elements in this regard are elements such as different business units, languages, local product groups, brands, product features, legislation, experience and culture, and to which publication channel the data is to be sent (e.g., websites, vendors/suppliers, customers, and data pools).

The local and other data can therefore best be filled at the local level. For smaller companies, it makes more sense for PIM to be managed from a single location, whereas with international companies it tends to be a mix of central and local. However, all members of the expert group believe the foundation of the PIM system (the architecture, i.e., the data and the process), the systems management, and the data quality rules must be centrally managed, as this is both more efficient and provides better options for controlling product information management.

Communication and Collaboration

Collaboration is a requirement for delivering a high-performance PIM, because many different organizational units are involved in managing the lifecycle of product data (from the time of its inception to the time of its phaseout). Unlike before, the product data created is used both within and

outside the company, allowing customers to assess the (poor or high) quality of the data. Collaboration also involves coordination between the various players, along with effective communication. Effective process management is an essential part of this process. We recommend conducting a stakeholder analysis once a year, based on which it will become clear how the collaboration and communication should be structured, and modified where necessary.

2.2 PIM Foundation

Architecture

Irrespective of the PIM strategy you adopt, in all cases the following elements are essential to PIM's foundation:

- Data model/architecture
- Process model/architecture
- *Naming conventions (and data dictionary)*
- Systems Architecture
- Maintenance of, and support for, the above architectures.

In addition to having an architecture in place, it is essential to employ a skilled enterprise architect who can keep track of developments and can monitor these architectures. This is possible for entities that are the responsibility of multiple departments/employees. Administering and updating the documentation about the architecture forms part of this process.

Processes

The organization of the processes and the workflows and data quality rules linked to these processes determine the efficiency of the structure of the product information and how quickly new products and product groups can be integrated and published (provided accurate information is available, of course). The onboarding and/or creation process is the most important when it comes to collecting the correct information. This is because anything that is clearly defined in the product information at the front end does not need to be completed or amended at a later stage. Something that has turned out to be difficult time and again is receiving the correct information from vendors. The following aspects are important in managing this successfully:

- a disciplined follow-up of queries submitted;
- assessing the quality of the data supplied and reporting the results of this assessment (vendor scorecard);
- recording commitments about the supply of product information in purchase contracts, as well as specifying penalties for non-compliance;
- engaging the services of a purchasing group to discuss the results.

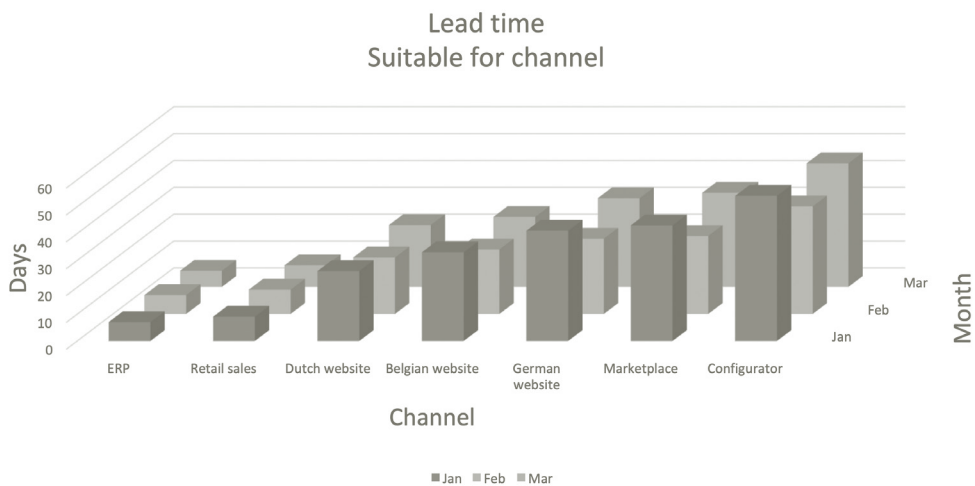
KPIs: It's All About the Data

Once the appropriate processes, supporting workflows, and data quality rules have been defined, the next step is to actually measure these points and set key performance indicators (KPIs). This is important, in particular, because measuring KPIs can reveal whether the corporate targets and objectives will be achieved, but it can also ensure that specific corporate objectives and targets are met. A good example shared by one of the expert group members: "The marketing department reported that sales revenues for a specific product group increased by 40% in one month, when in fact the marketing department had not organized anything. However, the product data had been edited and improved for this product group during the previous month." This example clearly shows that the accurate product data can really boost revenues.

When it comes to PIM, KPIs can roughly be divided into three categories: lead time (processes), substantive product features, and data accuracy. When setting KPIs, it is important to align them with the strategy, while at the same time demonstrating the added value of managing product data (qualitative and quantitative). These might be business drivers such as:

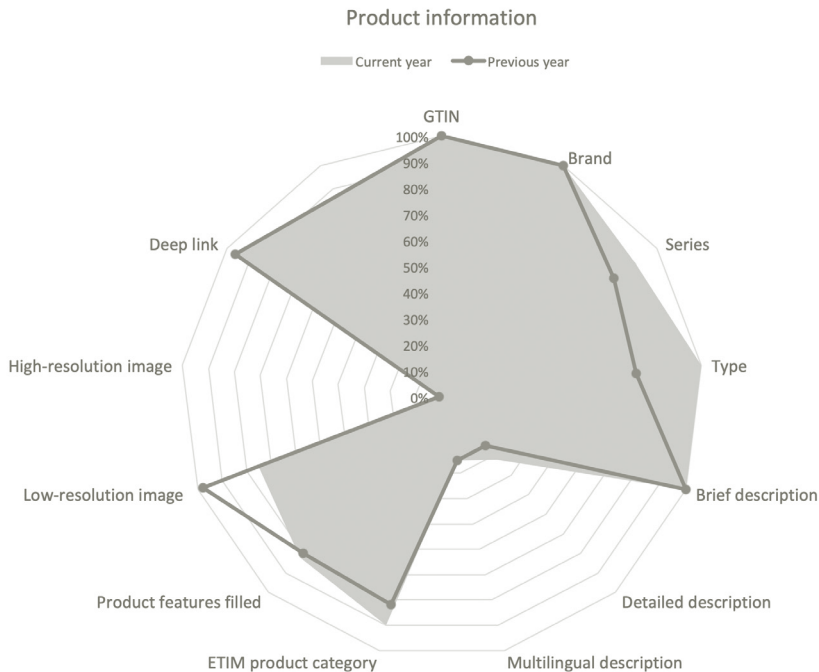
- increasing conversion rates;
- facilitating e-commerce;
- efficiently processing product data (*one way of working*);
- improving data quality (*one version of the truth*);
- ability to correctly apply the regulations;
- ability to meet market demand more quickly (*time-to-market*).

In theory, the lead time of various processes can be measured automatically. The measuring process also includes the time it takes to launch a new product from the ground up or making a previously existing item available for a new sales channel. In order to provide businesses with the option to more easily identify any problem areas and optimize (or further optimize) their processes, the various sub-steps of a process need to be measured and documented.



Lead time per "suitable for channel"

In addition to KPIs for processes, the expert group submitted proposals for preparing KPIs related to the data quality of the product data. Keywords for *completeness*, *consistency*, *redundancy*, *conformity*, and *uniqueness* can be used in an accessible way and provide a good first impression of developments related to the quality of product data. While measuring the accuracy of the data provides a better impression, this is significantly more complex and generally requires manual operations (including physical checks), comparisons with external data sources, or the use of customer feedback. These manual operations have made these KPIs more difficult to implement. New technologies such as machine learning will make the automated measurement of accuracy easier in the future.



Completeness per product feature

Since it is very easy to get bogged down in an excess of indicators when setting KPIs, it is important to keep the number limited by adding focus and letting the KPIs be a derivative of the corporate targets and objectives (and business drivers). However, this may vary by product group. For medical equipment, KPIs play a significant role in terms of completeness and accuracy. For seasonal work or trendy clothing, KPIs related to lead time are more important.

When defining KPIs, it is also essential to consider for whom they are intended and for what purpose they are maintained and updated. You must ensure that the KPIs are linked at all levels of the organization, so that a KPI at the corporate level has the same meaning as at the product level and all levels in between.

It is therefore important to document values in an absolute sense, but it is even more important to identify trends, so that changes can be tracked over time.

2.3 Management and Continuity

Awareness within the organization

While all self-respective organizations are well aware of the importance of MDM and product information, most people within these organizations tend to have no idea (or no idea yet) what acronyms such as MDM and PIM really mean, particularly in more traditional businesses. Ambassadors who do know what they signify therefore have an important duty in raising awareness within these organizations and getting the management on board. They must translate the importance of MDM and PIM into the value that can be created for the company in terms of conversion, efficiency, effectiveness, time-to-market and so on, for which MDM and PIM are prerequisites.

Training and Knowledge-Sharing

While creating awareness is important for high-performance PIM, the ongoing training of employees and sharing knowledge about PIM and MDM (both within and outside the company) are even more important. Since expertise in product information is still scarce in today's world, it is important that multiple people within the organization possess this expertise (as opposed to only the integration partner, who tends to be external to the company).

Maintenance and Support

Management (i.e., maintenance and support) is virtually always overlooked when setting up a PIM system, and this generally only starts once the PIM has been set up and implemented. On a daily basis, requests are received for new fields, new products are added and old ones replaced, while entire product groups are eliminated or new ones introduced. At the same time, upgrades of the PIM software are released regularly.

All this calls for efficient management processes, which are complied with through, among other things, change procedures and processes that ensure that the continuity of PIM is assured within the organization. As noted above, KPIs can help to demonstrate the ongoing improvement of data quality and the growing value of this quality.

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