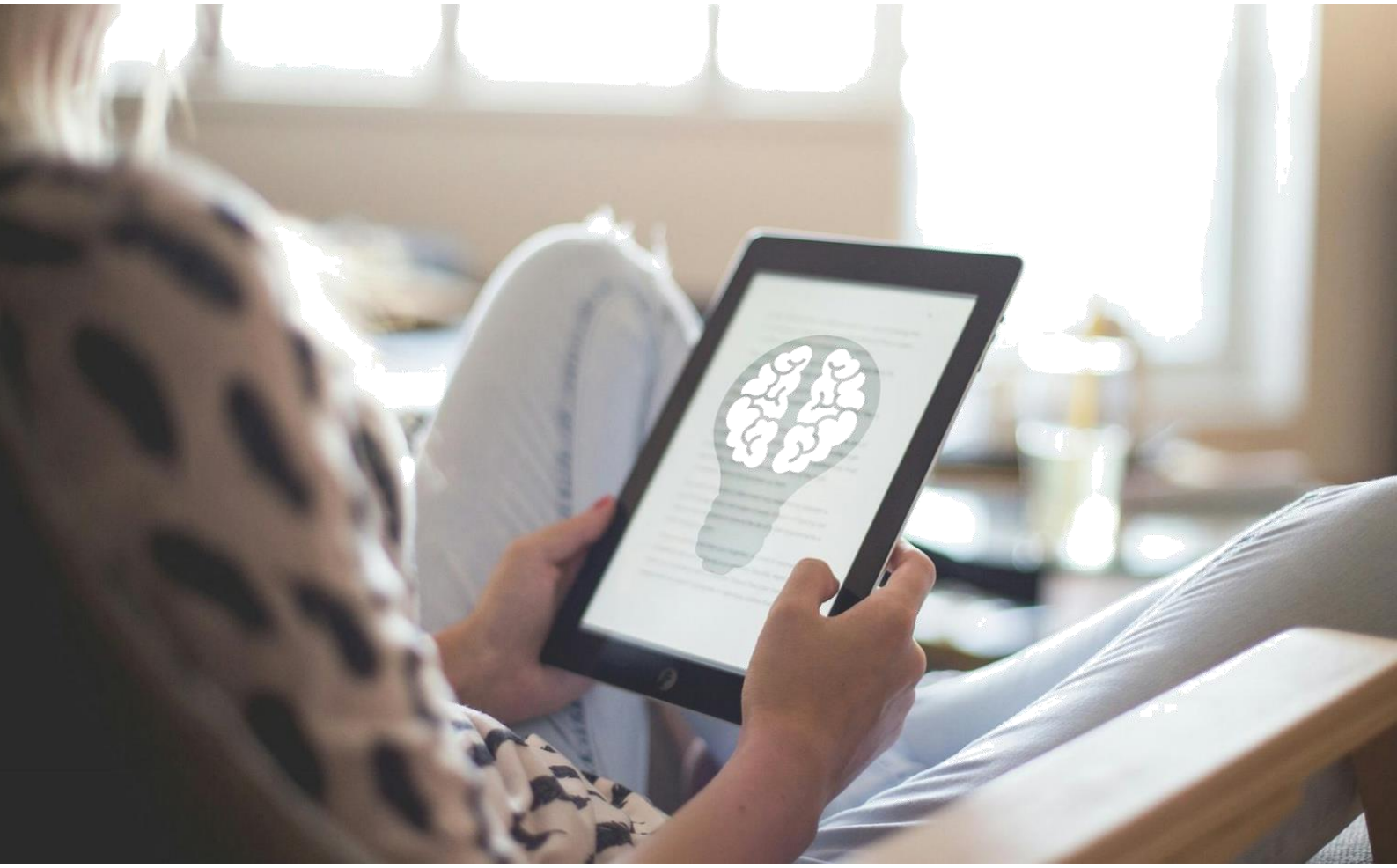

White paper
Intelligent PIM solutions

"The value is not in software, the value is in data and this is really important for every single company, that they understand the data they've got."

Squadra
Machine Learning Company

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Machine Learning Company

Intelligent PIM solutions by Artificial Intelligence

A PIM system stands for Product Information Management system. This system is essential for manufacturers, wholesalers and retailers and focuses on supporting the sales process by passing through product information. Due to the emergence of new powerful techniques, it is possible to make these PIM systems 'smarter' and thus obtain better product data for more products in less time. This white paper explains how to transform a PIM system into an intelligent PIM solution and what the benefits are.

Product Information Management in practice

Need for the right product information
The way consumers and businesses make purchases has changed dramatically in recent years. More and more purchases are made online and the buyer is increasingly demanding. Therefore, it is crucial that the sales platform has the right product information available. After all, a customer must be able to find all the necessary information online before he or she makes a purchase. Some examples of this information are product functions, technical data, user instructions, but also clear photos and videos of the product. If the information provision is insufficient, the customer will drop out early.

Labour intensive and incomplete
In practice, however, implementing and maintaining a PIM system is not that easy for several reasons. First of all, obtaining product data with the right quality is very difficult, because suppliers do often not supply the data with the right quality. Standards that are set up for product description (e.g. ETIM, GS1) are often not met or important information is simple missing. Secondly, receiving and processing the product data is often a laborious process and, thus, susceptible for human errors and time consuming (see figure 1).

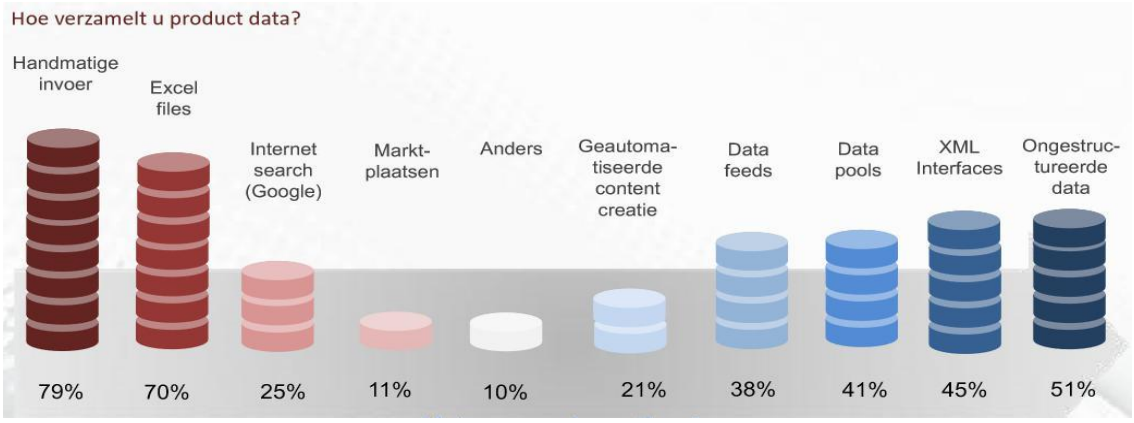


Figure 1: Degree of automation of new product data (Squadra PIM study February 2018)

Therefore, working with a PIM system is often labor-intensive. As a result, concessions need to be made: accepting lower quality of the product data or choose which products are digitally unlocked (e.g. the 'long tail' is often not made available online).

However, due to the rise of artificial intelligence, it is now possible to automate many of the PIM-related processes. Expensive manhours can be saved and the quality can be improved.

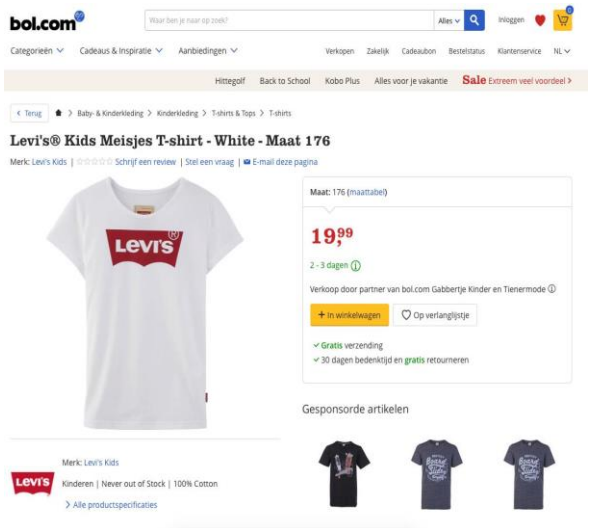
Intelligent PIM systems

Artificial intelligence
Artificial intelligence (AI) is a discipline that focuses on the self-thinking of machines. By training algorithms with data (machine learning), tasks can now be automatically performed that until recently were reserved for people. This is a very powerful technique that teaches systems to recognize and understand certain patterns and combinations.

Opportunities for AI in PIM systems
By using artificial intelligence PIM systems can be made intelligent. Applying machine learning in product information management offers the following possibilities:

- ✓ **Classification**
  One of the first steps in the onboarding of new products is classification into the right product category. After all, the chosen category determines which product information is to be administrated for a new product. Since there is often limited product information available (supplier, product description) this can be a hard task. However, using a trained machine learning algorithm, this limited information can predict the correct product category for new products.

- ✓ **Data enrichment**
  It is no exception when a supplier has product data files that are far from complete. As a consequence, potential opportunities to create revenue are missed due to the lack of this relevant information. However, the desired information can be gathered in other ways sometimes, such as on the vendor's website, in PDF files, or in the form of product photos. By using machine learning algorithms, relevant information can be extracted and can be used to enrich the product data. For example, Bol.com applies this technique to determine, based on the images of a shirt, whether it is a shirt with short, 3/4 or long or no sleeves.



- ✓ **Conversions: feature & value matching**
  Next to missing product data, another lack of the data sets from suppliers is the lack of using the right feature formats and standards. Converting to the desired features (for example, ' Connections ' to ' HDMI Yes/No ' for a TV) and the correct values (e.g. dimensions in mm instead of cm) is a time-consuming and error-prone process. Machine learning can help significantly by automatically detecting corresponding features and predict possible conversions.

- ✓ **Data quality**
  Online experiences are heavily dependent on the quality of the product data. However, manually verifying the quality of the data is almost impossible to do in large data sets. For this purpose, machine learning techniques can be the solution by running automated quality checks. These quality checks can be based on for example comparing the current data with the data available on the website or can be based on detecting

anomalies (e.g. strange products in a certain product category, lack of product photo) within the current data set.

- ✓ **Product recommendations**
  Machine learning algorithms can also be used to find correlations between certain products that seem not logical at all for humans in the first place. As a result of taking these correlations into account, product recommendations can be personalized and therefore, revenue can be increased. Did you know that 35 % (!) of Amazon's revenue comes from recommendations for accessories and alternative products based on these correlations?

- ✓ **Generating SEO texts, even in multiple languages**
  Product data rarely contains descriptive texts that can be directly used on the website, let alone that they are good enough to be found in the search engines (e.g. Google). In combination with machine learning, algorithms can be used to generate distinctive descriptive texts which can be which can be well found by Google and also are good readable. As a result, it is possible to automatically enrich all your long tail products with qualitative descriptive texts in multiple languages

A perfect match

Sonepar is a worldwide distributor of electrical appliances and components and processes thousands of new products per month. Due to this huge number of products and the specific knowledge that is needed (Sonepar uses the ETIM standard), the process of adding new products is labor-intensive and time consuming. The use of different languages and dialects (for example, French, French/Canadian and French/Belgian) and the different sizes from suppliers (from global to local), are making this process even harder.

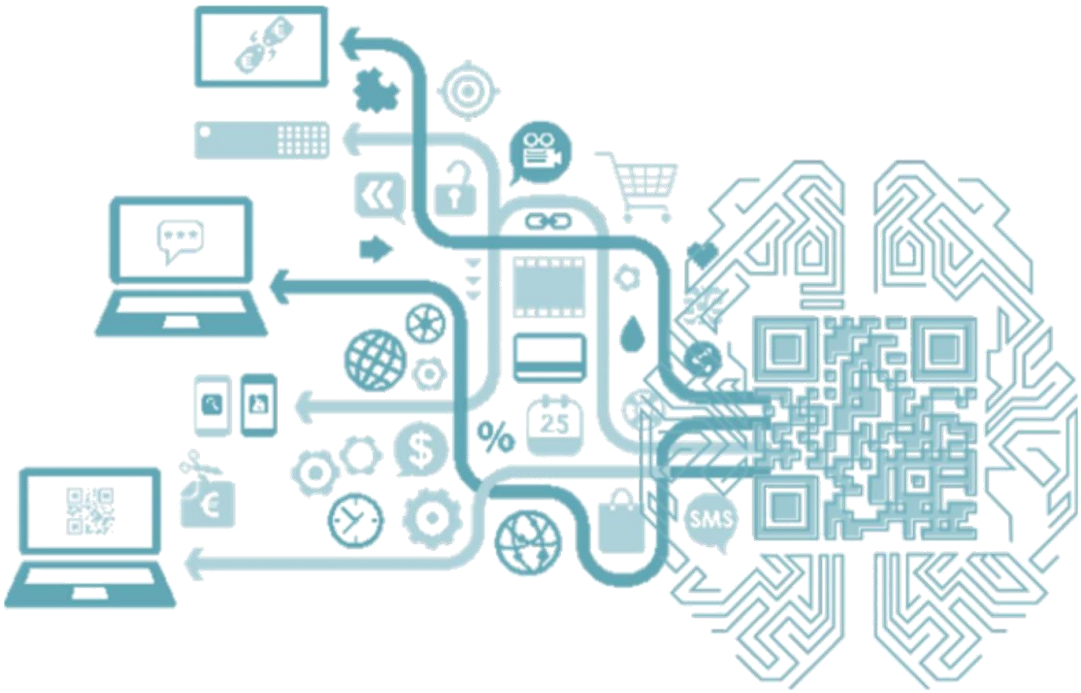
Sonepar has machine learning algorithms integrated in their PIM solution. As a result, both at country level and global level, the onboarding process for new products is now many times faster and performs with better quality.
By applying artificial intelligence, Sonepar is now able to offer a 'data as a service'.

Conclusion

The availability of the right product information is essential for a successful online/omnichannel strategy of wholesalers and retailers. However, gathering high quality product information is mostly a manual and therefore time-consuming process.

However, applying Machine learning techniques can automate the process of onboarding, maintenance and publication of product information in the PIM system. As a result, a larger number of products (e.g. the long tail) can be registered in less time with a higher quality.

Improved product data and improved user experience leads to higher conversion rates and higher sales. Machine Learning algorithms can be applied on top of existing PIM systems, to transform these systems into an intelligent PIM solution.



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Squadra Machine Learning Company is an innovative Dutch company that combines knowledge about business processes, data mining, data analysis, statistics and data visualization for the purpose of creating machine learning algorithms and applying Artificial Intelligence. We are passionate about Data Science and Machine Learning in particular and help our customers to take advantage of this intelligent technology, so that they can offer better services, be more efficient and outperform their competitors.

If you would like more information about our applications for intelligent PIM solutions or if you want to brainstorm about what artificial intelligence can mean for your company, please feel free to contact us.

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