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The new PCN management standard

Consistently **DIGITAL**, **EFFICIENT**, **STANDARDIZED** and up to date
PCN processing today



smartPCN



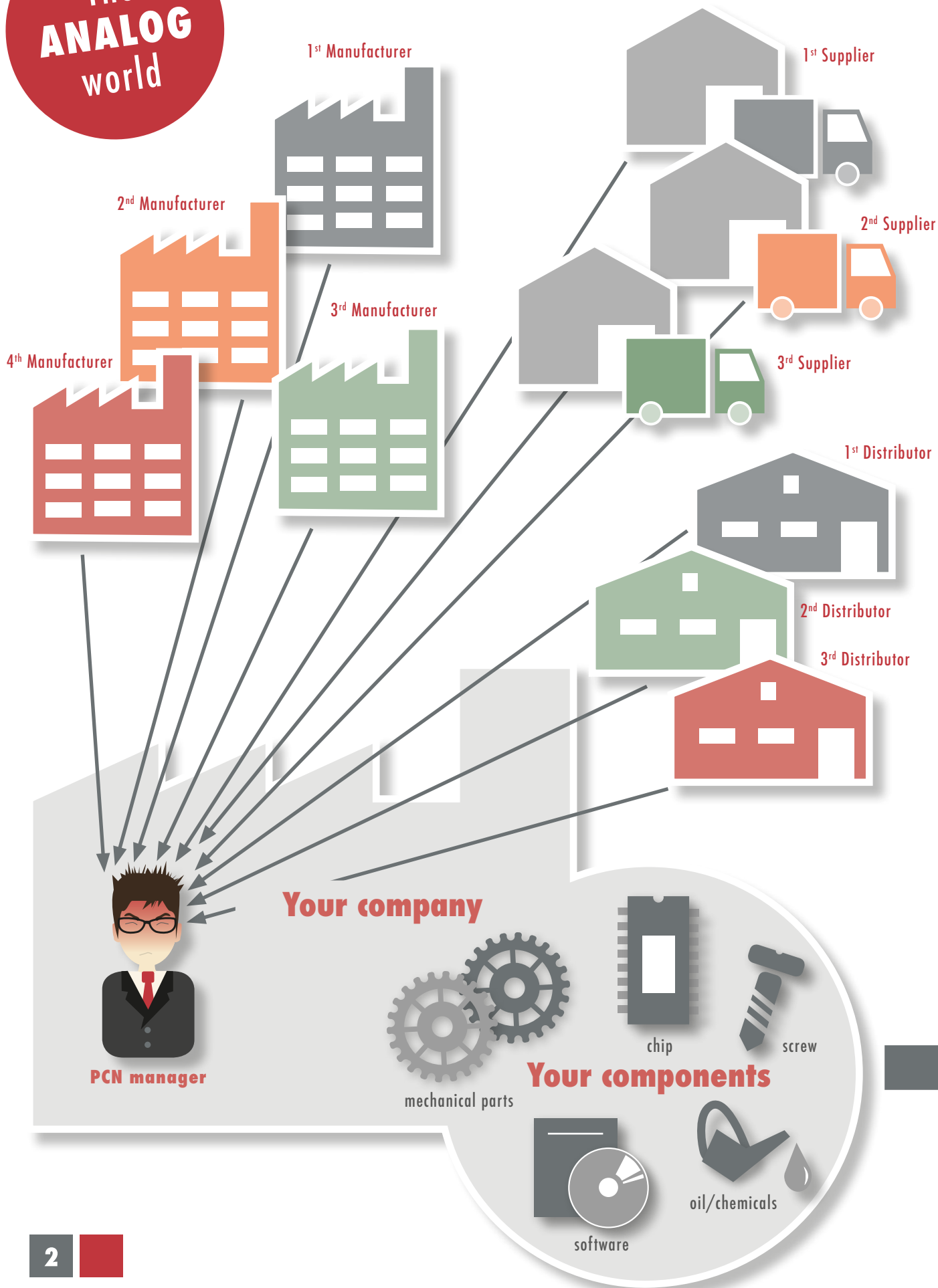
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smartPCN



The ANALOG world



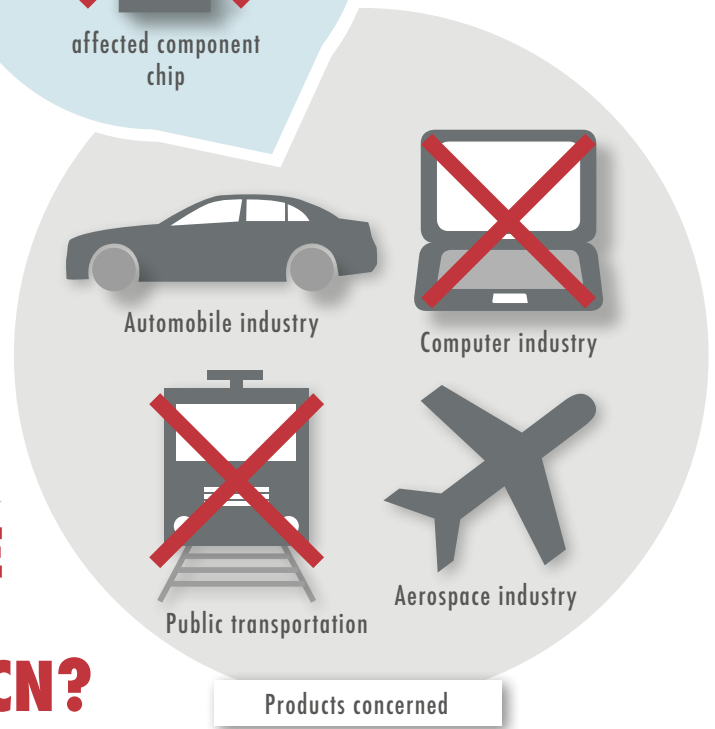
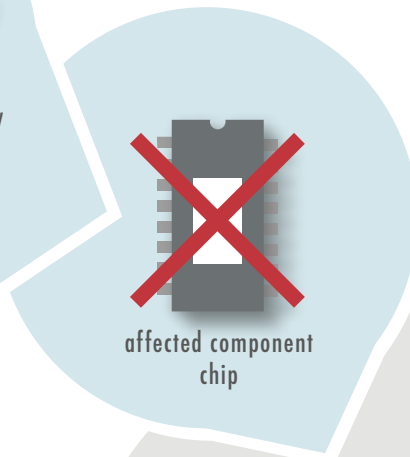
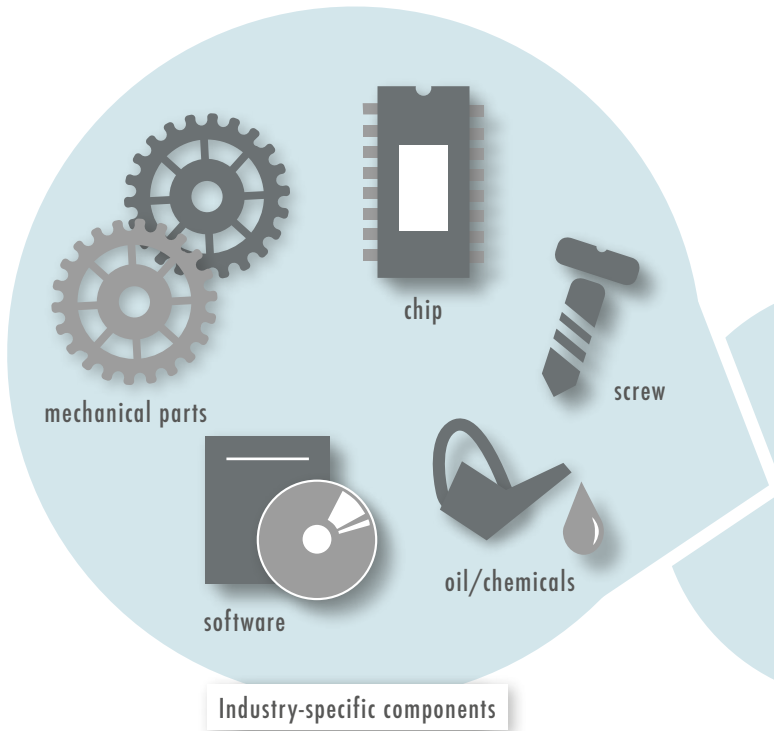
THE GLOBAL BUT STILL ANALOG WORLD

ALL of us are increasingly affected by dependencies due to our global and constantly growing world – whether as a producing company (manufacturer), as a service provider or as a final customer. Just consider what happens when an essential component of this supply chain changes or is dropped completely. Commonly, we fall back into reactive behavior patterns, always delayed and always accompanied by high cost. Why not change this reaction into action after all?

The solution:

First, coordinate the impact of risks and life cycles with your supplier and respond to changes or non-availability immediately. Avoid bottlenecks and prevent production losses. The keyword is **active obsolescence management**.





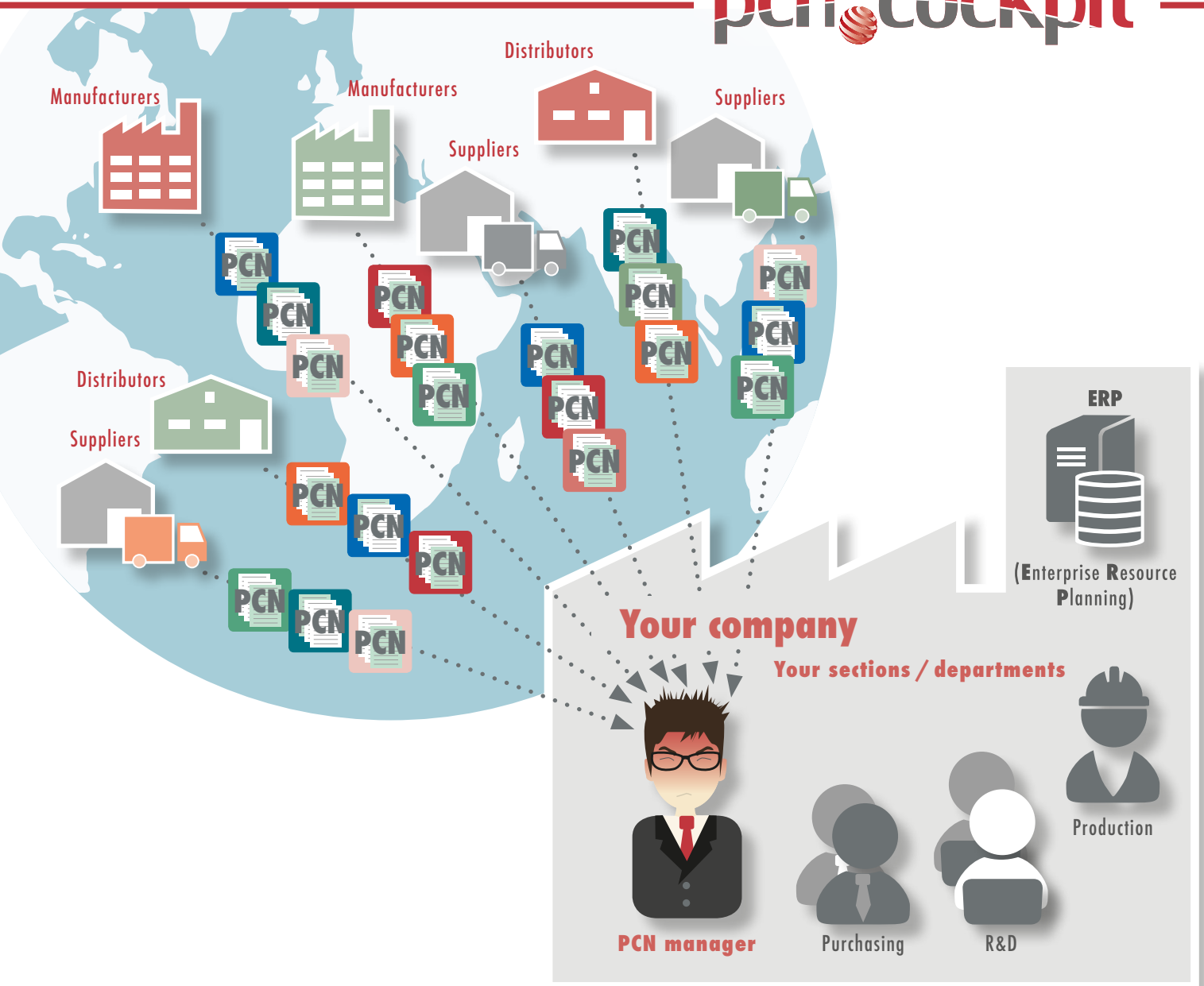
WHAT IS THE PURPOSE OF OBSOLESCENCE MANAGEMENT AND PCN?

In our fast-paced world, we experience with growing frequency that components such as single parts, modules or articles are replaced, modified or even discontinued at short notice. The modification or discontinuation of components (i.e. electronic articles, a screw, plastic film...) or of a certain substance (oil, chemical, etc.) can have a tremendous impact on subsequent modules and sub-assemblies and ultimately affect the end product.

★ This is referred to as obsolescence.

★ This does not mean that the life span of products is reduced systematically. It is a matter of minimizing or rather preventing any negative consequences when components (of products) are no longer available.





In a so-called PCN (Product Change Notification), any modification or discontinuation is announced and communicated by the manufacturer or distributor in various ways. The communication takes place in different ways, (e. g. PCN emailed to the customer as attached pdf file, sent by fax or via a distributor, provided on the company's website).

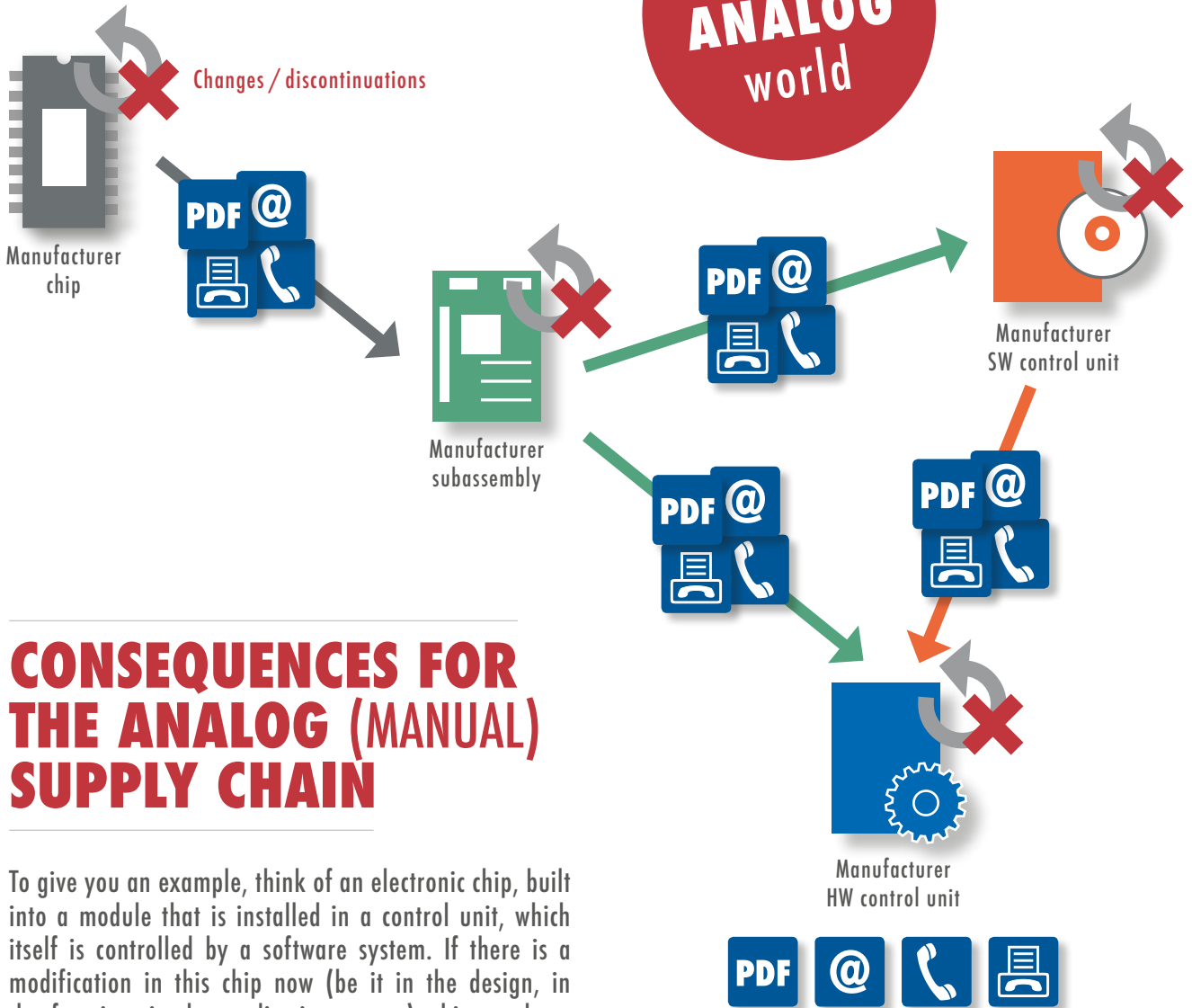
All too frequently, thousands of companies using that very component do not receive the crucial information about a product change or even discontinuation in time or are not informed at all. Unless it has been specifically agreed upon, the manufacturer is not bound to inform EACH AND EVERY customer in person (which would hardly be possible in fact). Hence, it is the customer's (i. e. your) responsibility to gather any information on product changes, which is a costly and highly time-consuming procedure. The flood of PCN has become much too large to be coped with in a careful and thorough way by so-called PCN managers or components and obsolescence engineers alone, and for them to be unable to infer resulting actions / requirements.

Did you know that just about 40,000 components were discontinued in 2014, but already more than 80,000 in 2015 and as many as 120,000 in the year 2016?

FOM Amsterdam 2016



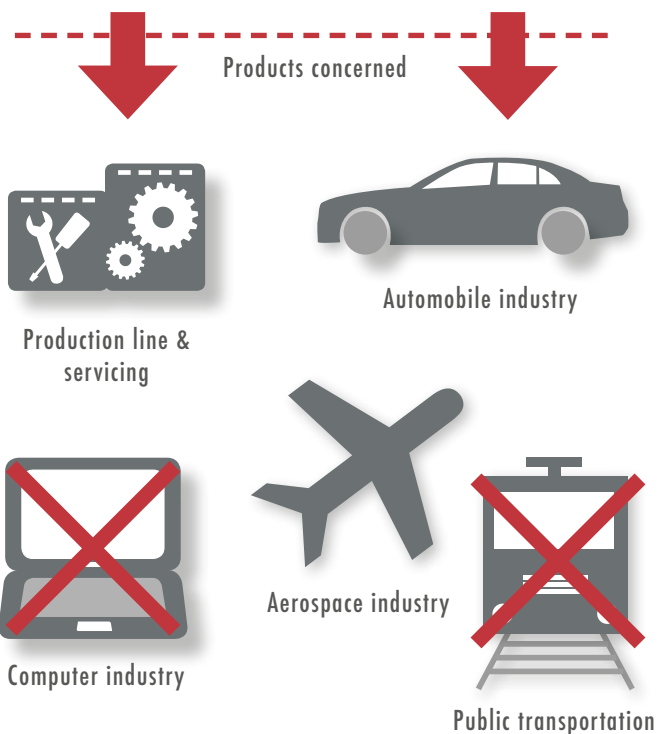
The ANALOG world



CONSEQUENCES FOR THE ANALOG (MANUAL) SUPPLY CHAIN

To give you an example, think of an electronic chip, built into a module that is installed in a control unit, which itself is controlled by a software system. If there is a modification in this chip now (be it in the design, in the function, in the application area...), this can have enormous effects on the assembly in which the chip is installed. Moreover, the control unit including software and even the end product can be affected in the end. In a worst-case scenario, the chip is not produced any more and therefore is no longer available all of a sudden. What are your options when you have outsourced the production of assemblies and other parts, or various parts are purchased additionally? There is no point in shifting responsibility because in the end, it is you and the end product that are affected.

The entire supply and information chain depends on a fast, smooth and continuous process. An analog (manual) environment is bound to fail, as the complexity and the sheer masses of the PCN (Product Change Notification) increase on a daily basis. Therefore, it is high time to switch to a fully DIGITAL (automated) system when organizing both external and internal business processes.





In addition, the PCN manager needs to be in constant dialog with the departments affected. Analyses have to be initiated and evaluated, and as a result, decisions have to be made on what steps to take. Up to now, the exchange of information has not yet been automated and is commonly neither transparent nor consistent, while the workload is growing constantly. Plus, there is always a risk of losing data and information.

Wouldn't it be a good idea to enable PCN managers to keep track of the entire chain of activities, ranging from the generation to the download of each PCN? To stay on top of things when activities are initiated, and responsibilities are allocated? To be in control of purchase, development and production, so that they can be true managers after all?

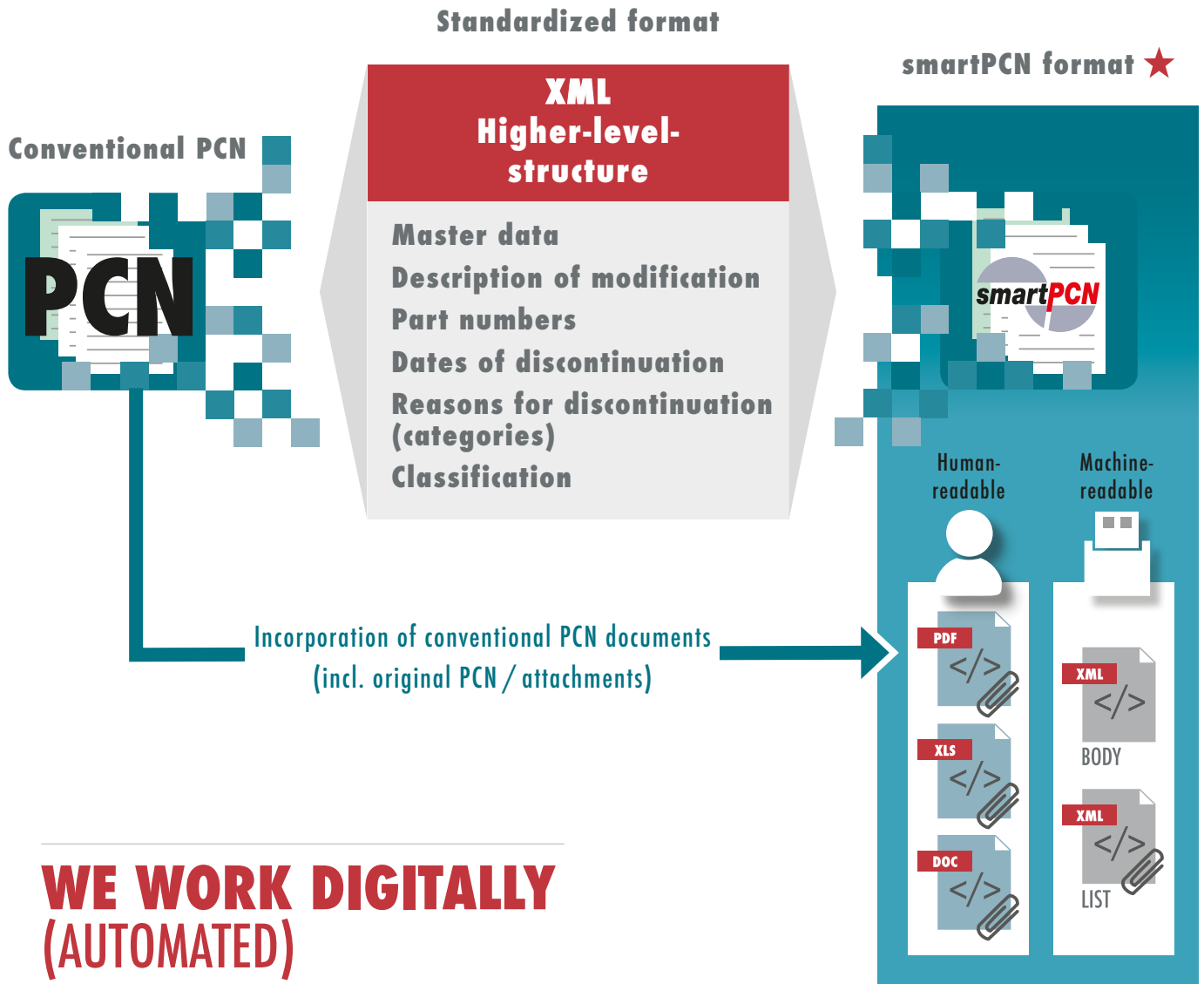
Now, what exactly are the solutions that we have developed, and how do they work so that the global and steadily growing problem of obsolescence can finally be tackled?



THE GLOBAL DATABASE PCN.GLOBAL (AN ESSENTIAL COMPONENT)

A team of experts operating in Germany is in charge of the pcn.global database, which serves as a basis for the smartPCN format. The format is industry-sector independent. The PCN are supplied by a number of different sources (e. g. producers, distributors, suppliers or self-generated PCN). A smartPCN is generated from each PCN, to which the original document is attached. That way we make sure that the conventional PCN is included and can be referred to at any time (see p. 9)

★ The smartPCN format has been developed by COG Deutschland e. V. as a DIGITAL standard for PCN and is compliant to VDMA standard 24903.

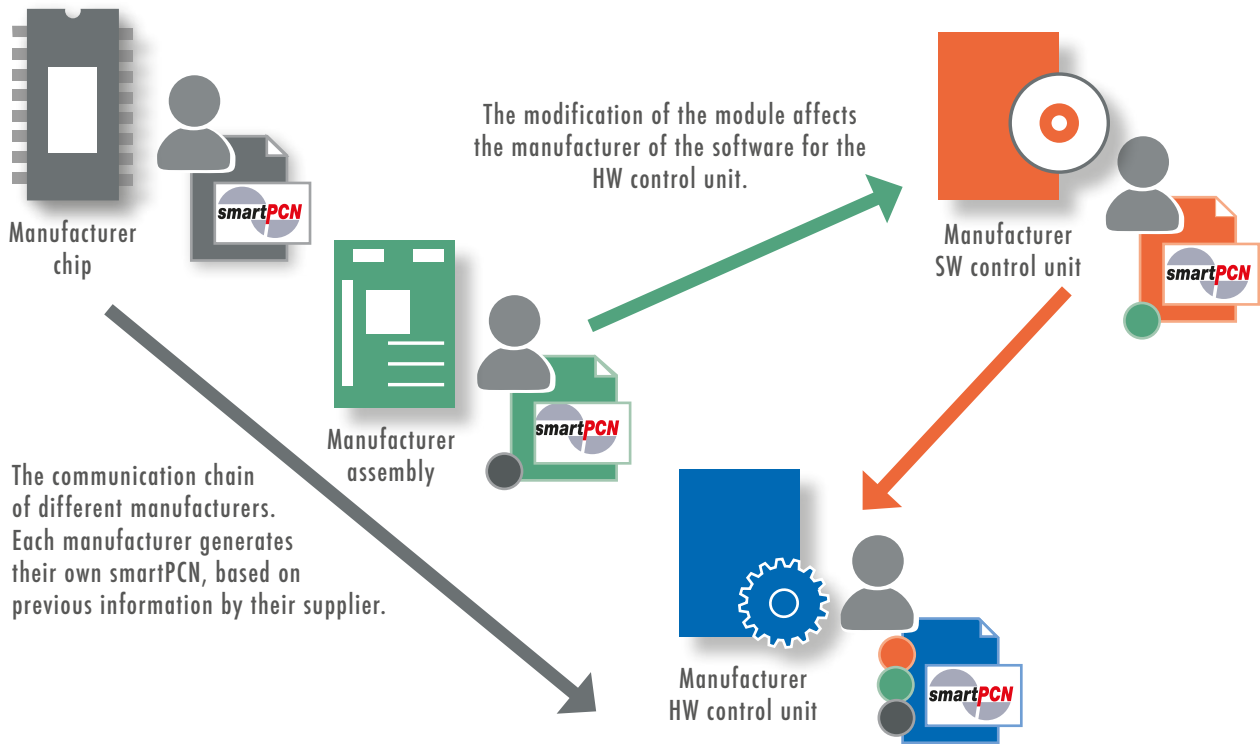


WE WORK DIGITALLY (AUTOMATED)

In order to process previous PCN digitally, they have to be split into a machine-readable and a human-readable part each, the latter of which contains the original document. All relevant PCN information, such as manufacturer's name, manufacturer part numbers, discontinuation date, kind of modification, thus the classification (major, minor, EOS, LTD etc.) will be stored in the generated smartPCN. This guarantees that the PCN can be evaluated by our software system pcn.cockpit.

Already today, smartPCN meets the **VDMA standard 24903** adopted in 2017, which is compatible with international standards. Whenever a chip is modified or even discontinued now, all relevant information is provided in a machine-readable way, so that it can be evaluated by software. This allows a direct comparison with the respective in-house ERP data.

The DIGITAL world



Affected end products

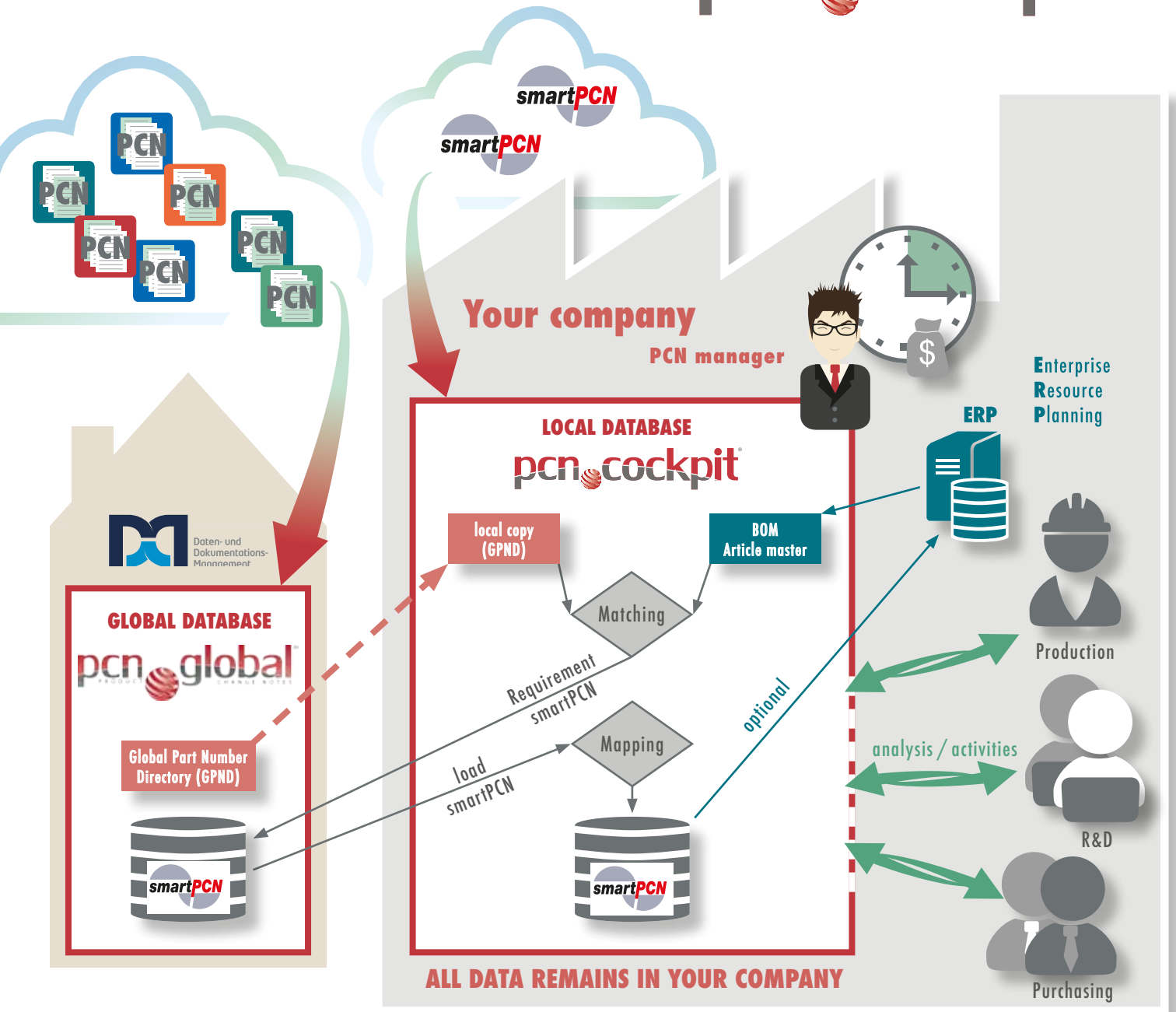


Computer industry



Public transportation

Now that the preconditions for an automatic - that is a **DIGITAL** - system have been established, any modification or discontinuation in the supply chain (production chain) can easily be detected, and information can be passed on without delay (DIGITAL). Potentially severe consequences in the supply chain are immediately visible up to the end product, so that respective measures can be initiated in time.



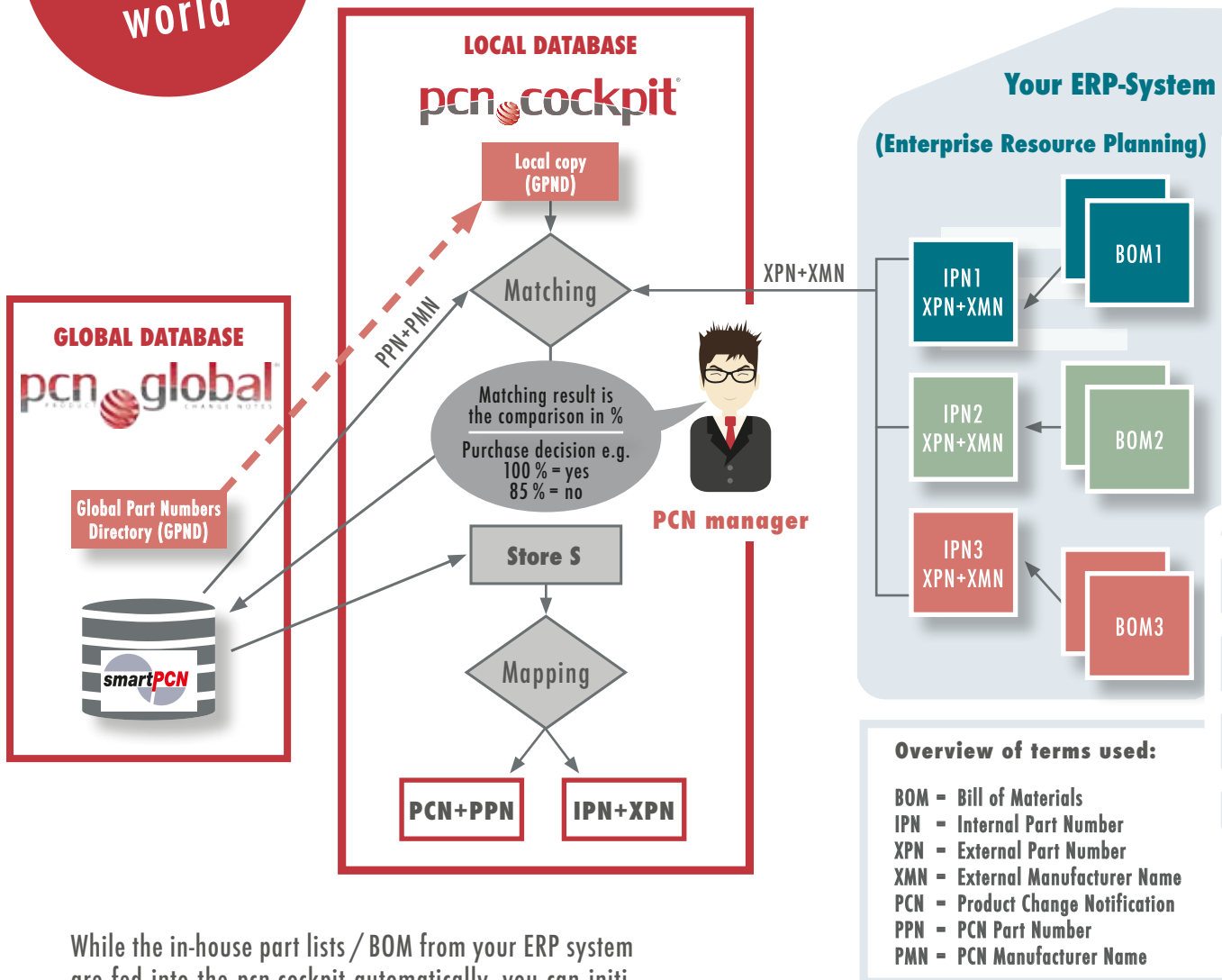
THE FUNCTIONALITY OF THE DIGITAL SYSTEM: PCN.GLOBAL AND PCN.COCKPIT

Our solution consists of two key components. The database pcn.global contains PCN in the smartPCN format. All of the data originates from globally available PCN, converted by our experts. The pcn.cockpit is a management system, fed by the pcn.global database with relevant data extracted from any available PCN.

Very **IMPORTANT**: The software solution pcn.cockpit (in conjunction with your in-house part lists / BOM) remains on your server so that no data ever leaves the security of

your company's network. **ALL** article numbers used and **ALL** smartPCN (from the pcn.global database as well as from smartPCN already on file) are matched on site, so that no relevant data is transferred to third parties outside of the company. In case a manufacturer provides already smartPCN data sets, they can be imported into the pcn.cockpit as well.

The DIGITAL world



While the in-house part lists / BOM from your ERP system are fed into the pcn.cockpit automatically, you can initiate a so-called **MATCHING** process on a daily basis, for example. Complex algorithms automatically compare (or match) the internal part number (XPN) or external manufacturer name (XMN) of the product and the PCN with the PCN part number (PPN) and PCN manufacturer name (PMN) on file. Based on the hit ratio, i. e. the percentage of matches, the manager determines the relevance of the smartPCN listed compared to XPN (e. g. all PCN that show a matching rate of >95%). After selecting the requested (or several) smartPCN, you can download them and start a **MAPPING** process. Following this, **ALL** data on the respective smartPCN along with the original document (often with a pdf document attached) is entered into your local database. In that manner, the original PCN is not lost and all of these data remain on your server. Due to the permanent connection / link to your BOM, you can

immediately detect which articles or modules up to the end product are affected.

In order to continue the automatic process, you then create freely definable workflows to match your needs, and the pcn.cockpit will remind the departments or persons concerned of their tasks. In case you prefer a graphical analysis or prioritization (related to every PCN) including a traffic light system, the software solution pcn.cockpit will provide this as well.

Selected screenshots summarizing the essential features are presented on the following pages.

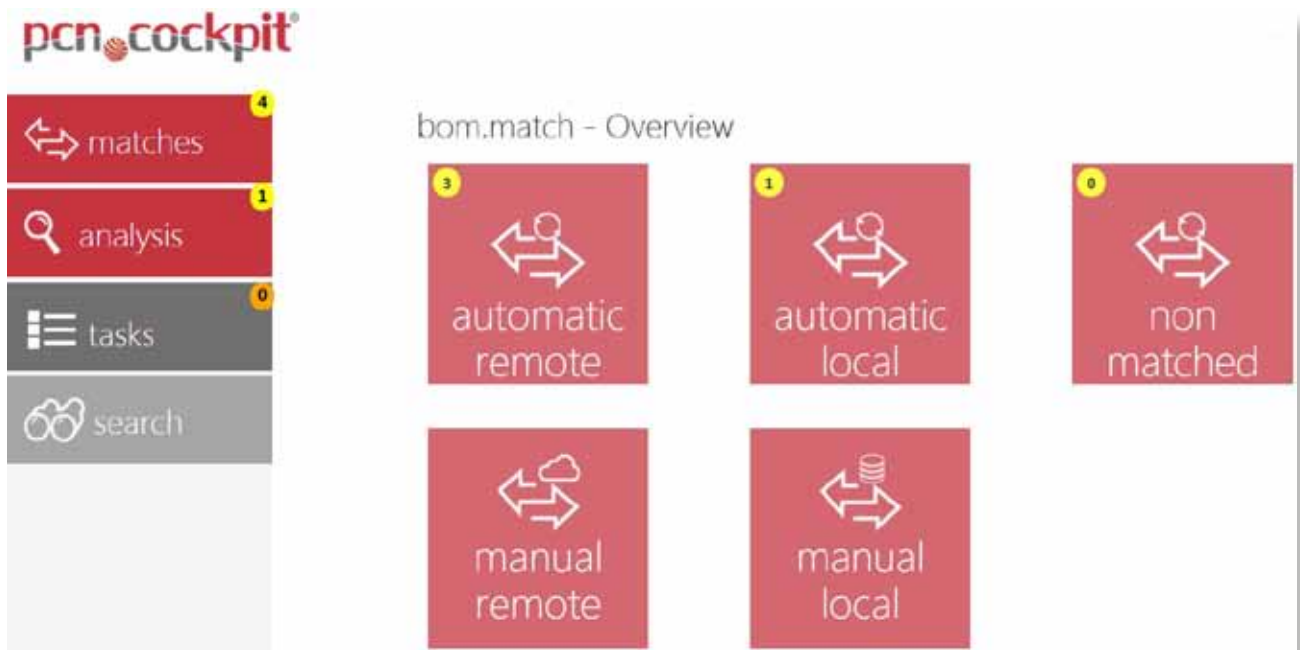


Illustration example
(Changes possible)

THE SOLUTION IS PCN.COCKPIT

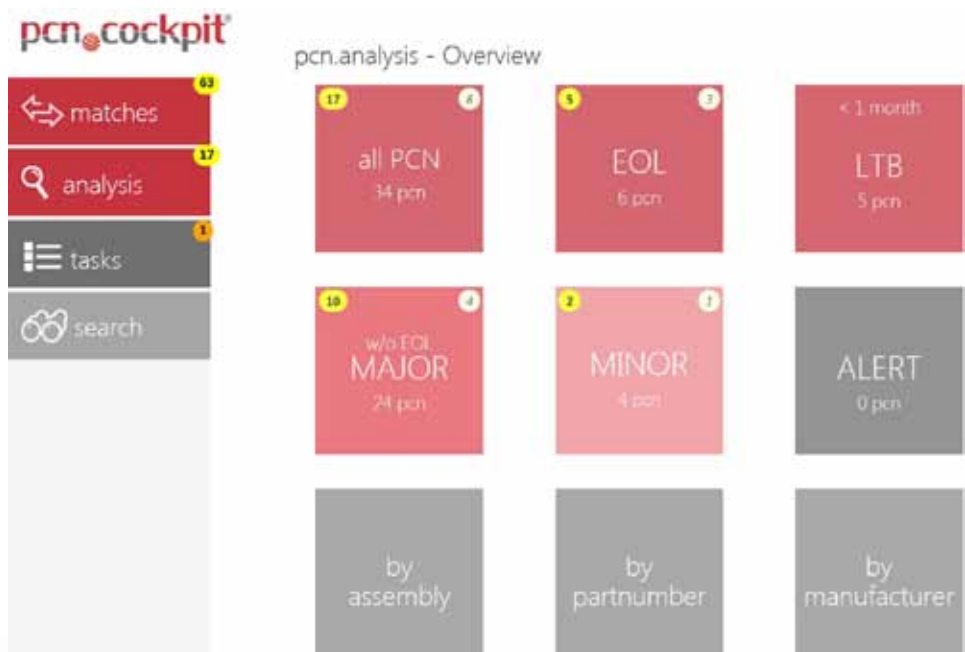
The software solution pcn.cockpit is a browser-based application, available to a global corporate network with all common browsers.

According to access authorization (provided by your administrator), you have the option to choose from: viewing **EVERYTHING**, incorporating **NEW** elements (PCN, part lists, BOM, attachments, departments, persons) and **ANALYZING** the data.

The essential steps in summary:

- Automatic comparison of part lists/BOM with your ERP system and the global database
- Performing a **MATCHING** process (check what in-house components are affected and identify the respective PCN)
- Making a decision/selection according to the percentage of matches
- Obtaining only the smartPCN affected, and even generating and adding your own PCN if required
- Performing a **MAPPING** process with all in-house parts affected
- Immediately recognizing dependencies between parts and assemblies affected up to the end product (**LINKING**)
- Issuing an alert message for the PCN in question
- Starting Analysis Tasks and deriving Action Tasks (measures) from that
- Enabling a status overview, management and control of the PCN and the allocated results

The DIGITAL world



PCN No.	PCN Title	Man.	Issu.	Status	Affected Assem.	Import.	Category
ABC88007	Product Change Notification (PCN)	DCM	2017-01-11	unprocessed		2018-01-21	Major
E01-138721-pa-08	Produktänderung	Hisco77	2017-07-21	WP-Analyse...	Flugschreiber software	2018-01-21	ECR
184-225177004	Qualification of CuPdAu bond wire in ad...	Microchip	2018-02-01	unprocessed		2018-01-20	Major
Werna20560158	Produktänderung	Werna	2016-05-18	WP-Action...	Bug-Moeder Sewa 07	2018-01-20	EOL
JACN-08593876 Rev...	Qualification of CuPdAu bond wire in ad...	Microchip	2017-07-12	unprocessed		2018-01-20	Major
P021482X	IQ2018 Product Discontinuation Notice	ON	2016-10-18	unprocessed		2018-01-19	EOL
0157-02M-948218	Data Sheet - 24-C148-164-12C Serial EDP...	Microchip	2016-03-04	unprocessed		2018-01-12	Minor
Mingard00170210	Produktänderung	Mingard	2017-02-10	unprocessed		2018-01-12	EOL
PR22150XA	Product Bulletin of 5th identifier code re...	ON	2018-01-08	unprocessed		2018-01-11	Major
20171115000	Qualification of Caspers Software (CS2) an...	TI	2017-11-17	WP-Action...	SOM-Jerusalem	2017-12-12	Major
20171118000	Discontinuation of select devices at Artec...	TI	2017-11-06	unprocessed		2017-12-12	EOL
1251-051743-C4006R13	Standard Labels Change	Seleneis	2017-10-10	unprocessed		2017-12-12	Minor
JACN-150E0113 Rev...	Qualification of CuPdAu bond wire in ad...	Microchip	2016-06-29	unprocessed		2017-12-07	Major
JACN-150E0113	Qualification of CuPdAu bond wire in ad...	Microchip	2016-06-08	unprocessed		2017-12-07	Major
FR06220904	Qualification of ON Nipetus Japan as aBL...	ON	2017-10-31	WP-Action...	Dxxx ZMG00	2017-12-04	Major
P082KA0	Information Only Notification	ON	2016-11-23	WP-Analyse...	Dxxx ZMG00	2017-12-01	Minor

Illustration example
(Changes possible)

As a PCN manager, keep an overview of your tasks and the to do's of your contact persons. Don't miss or forget relevant activities any longer that might be caused by discontinuation or modification of a product. Automatic matching (also manually if required) is performed with available smartPCN every day. What pcn.cockpit can do for your business is to immediately identify any modification to components from external sources and in your ERP system, to analyze these and to respond accordingly.

THE PCN PROCESS:



1 All smartPCN from the pcn.global database or any other sources connected to it are available here. Based on the MATCHING results (shown in %), you can see which PCN matches an in-house part number and manufacturer on file. Now you can decide whether or not to download the smartPCN including the original PCN.

2 What is the content of the smartPCN? Which components are affected? During the MAPPING process, the affected components and the respective smartPCN are permanently linked. That way you can afterwards see what components up to the end product will be affected (Linking).

3 Analyze the effects on your products, their production and your customers. Approach freely defined groups or departments with allocated persons automatically via email. Evaluate the feedback and derive measures accordingly.

4 Start the respective action here via the freely defined groups, departments or persons and check the results. Subsequently complete the PCN process.

5 Generate your own smartPCN for your customers if required and manage them in the pcn.cockpit.

We are looking forward to you and will be happy to answer your questions.

Your pcn.cockpit team.

Contact information is provided at the end of this brochure.



PCN processing TODAY: 100% DIGITAL, EFFICIENT, STANDARDIZED, SAFE and UP TO DATE.

With the products
pcn.global and **pcn.cockpit**



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