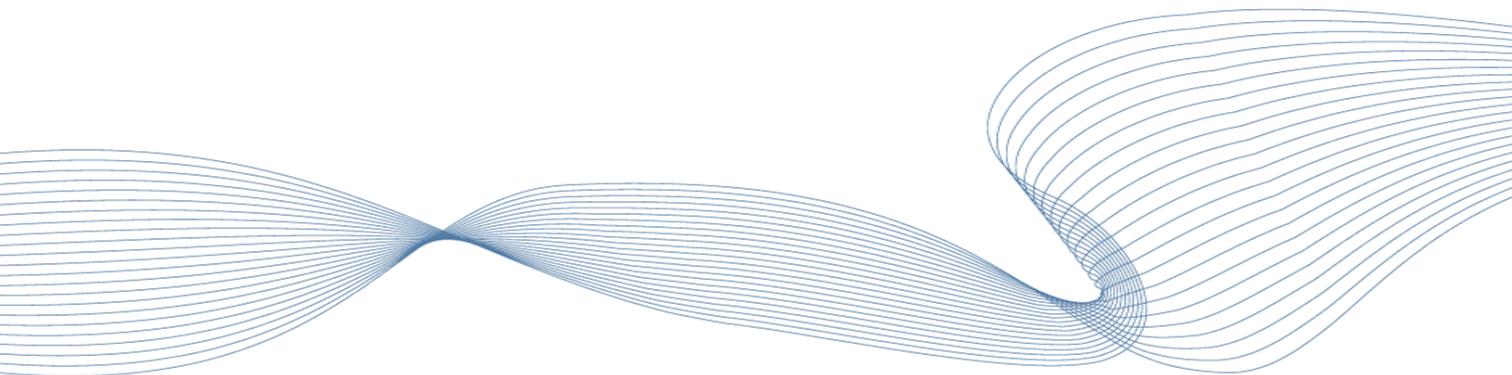


Supplier Connect
Supplier Collaboration within Product
Development

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1. PREFACE: CHALLENGING TIMES FOR MANUFACTURING COMPANIES

Manufacturing companies are operating today in an increasingly complex business environment. This environment will become even more complex with Industry 4.0, which represents the next industrial revolution. This will bring connectivity to machines and factories, and promises a great leap forward in terms of industrial flexibility and efficiency. However, on-going globalization will increase pressure on manufacturers to further improve competitiveness. Bringing innovative products and services quickly and cost-effectively to the market will be a company's key to success. Optimizing processes around product design and development is, therefore, becoming crucial. However, in order to increase efficiency of product development processes, it has also become important for manufacturers to determine which part of the original value proposition and business model they should retain in the future. Consequently, it has become a major challenge for companies to identify reliable business partners and an efficient supply chain that will help to increase efficiency right from the product design and development phase.

On-going globalization will also make this challenge even more complex because supply chains are distributed globally and design decisions can often be limited by process inefficiencies and by lack of materials, resources or expertise, which subsequently makes product development more expensive than it should be. Therefore, efficient collaboration processes between manufacturers and their external business partners and suppliers becomes mandatory.

As PAC believes that collaboration with business partners and suppliers within product development processes will become increasingly important, PAC wanted to identify the pain points and challenges that currently relate to collaboration within product development, determine the current degree of collaboration with external suppliers as well as internally (e.g. between engineering and procurement), and assess the IT solutions that are currently in place or are planned, which will optimize supplier collaboration within product development.

On behalf of Atos SE, PAC conducted 80 telephone interviews (CATI) in June and July 2015 with manufacturing companies (> 500 employees) in Europe (Germany, Austria, Switzerland, France, the Netherlands, Sweden and Denmark). The survey participants were primarily the heads (or deputies) of product development departments (48% of all respondents) and the heads (or deputies) of procurement departments (46% of all respondents).

2. COLLABORATION WITHIN PRODUCT DEVELOPMENT: CHALLENGES AND PAIN POINTS

2.1 Major Challenge: Different Stakeholders (incl. Suppliers) Need to Collaborate

Typically, the different stakeholders within a collaboration process are motivated by different interests and are not “speaking the same language”. This is a major challenge for manufacturing companies.

Defining and speaking the same language within collaboration processes is no easy endeavor. This not only refers to the actual language spoken, which naturally differs from country to country, but also applies to the various business units that use their own specific set of vocabulary with which others may not be familiar. In the product development processes, major internal stakeholders include engineers, procurement, IT, and management.

The situation becomes even more complex when referring to collaboration with external partners, e.g., with suppliers or engineering service providers. Results from the survey show that the contribution of suppliers to products is set to increase (see Figure 1) and PAC, therefore, expects collaboration with external partners within product development to become of major importance.

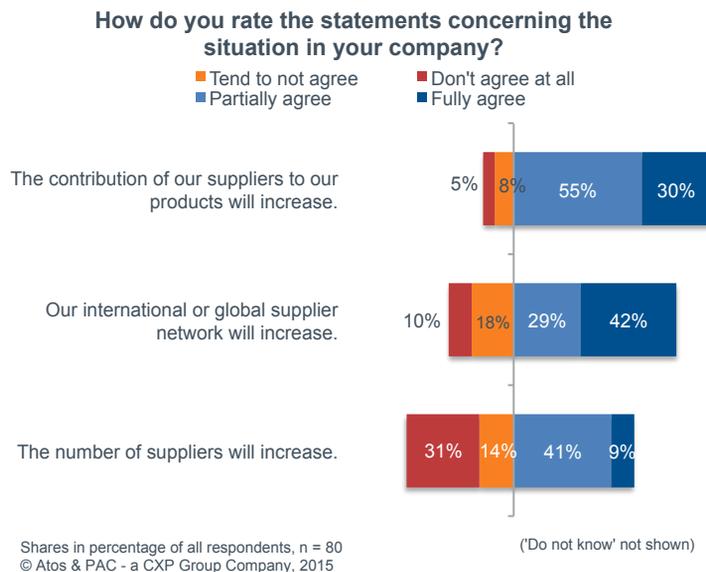


Figure 1: Survey results: Future development of the existing supplier network

2.2 Collaboration-related Pain Points in the Product Development Field

Collaboration processes in the field of product development do not take place within the product development departments alone. Other major stakeholders in this context include suppliers of parts and components and other business partners, such as engineering service partners and procurement departments, which are responsible for ordering the necessary product parts and for maintaining the commercial aspects of supplier relations. Survey results show that a relatively large percentage of manufacturers today consider that collaboration is insufficient within and between the major stakeholders of product development processes.



Figure 2: Survey results: Current pain points in the product development field (general)

Looking particularly at the collaboration with suppliers, 28% of respondents considered insufficient collaboration in the product development field as a strong pain point.

Where the quality of existing collaboration processes with suppliers is concerned, survey results show a mixed picture. Whereas the majority of respondents already have clearly defined and standardized processes in place without using any dedicated software, almost one third of respondents already use dedicated software solutions in addition to standardized processes.

However, 26% of respondents have neither structured processes nor dedicated software in place to support collaboration processes with suppliers. Such ad-hoc management of collaboration processes is something that PAC considers a potential root cause of insufficient collaboration with suppliers.



Figure 3: Current quality of collaboration processes with suppliers

Certain pain points exist that have a particular impact on procurement and product development departments. Procurement departments, for example, are typically engaged with external partners who manage supplier relations from a commercial perspective, sourcing direct material and managing compliance requirements. Product development departments (e.g. engineers) are mainly engaged with suppliers for exchanging design data. According to survey results, respondents feel that there is room for further improvement in all of these specific areas.

In which of the following areas do you consider that your collaboration with suppliers should be increased within product development?

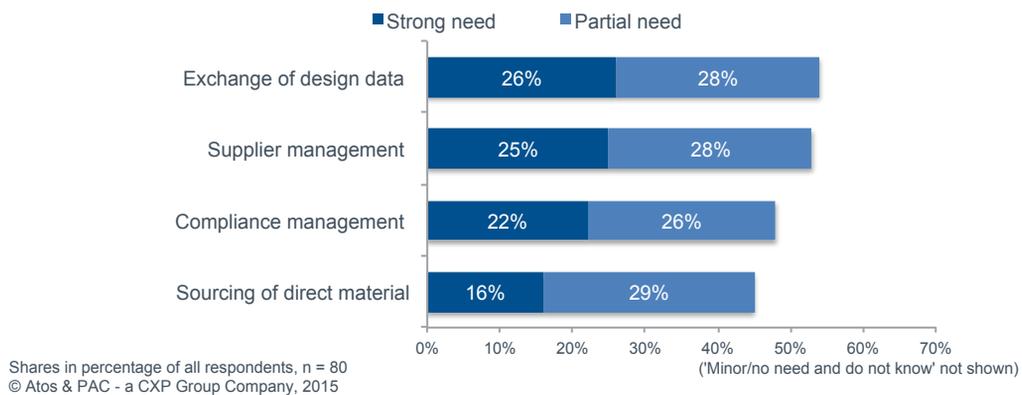


Figure 4: Status quo: Collaboration with suppliers – areas for improvement

PAC also asked manufacturers about other specific aspects related to product development processes, to find out whether these are currently pain points, and, if so, to what extent.

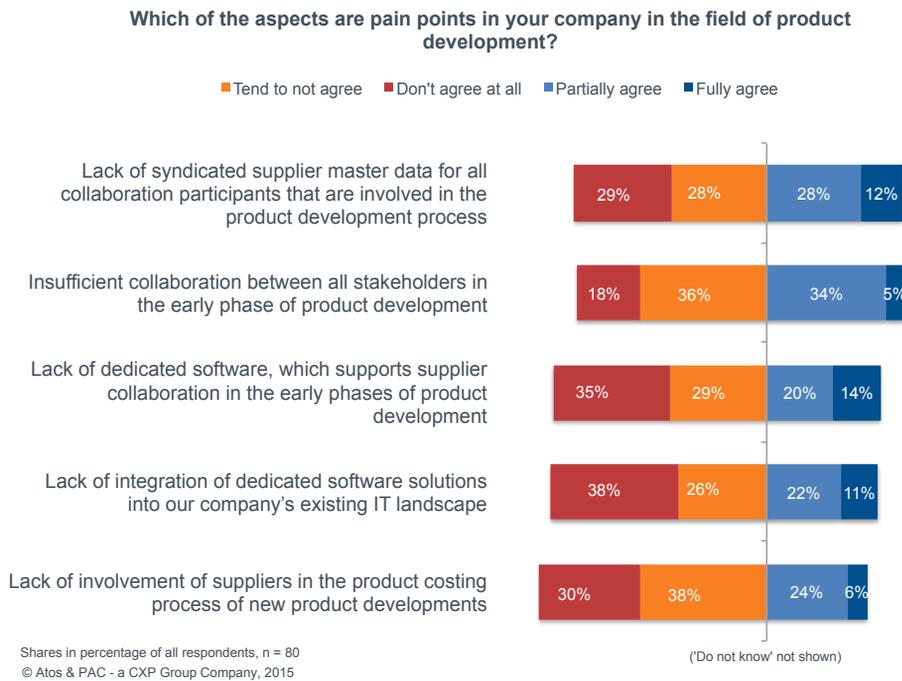


Figure 5: Survey results: Current pain points in the product development field (specific)

The majority of respondents stated that the lack of syndicated supplier master data for all relevant collaboration partners is a strong pain point. This clearly indicates that having consistent data, e.g., about suppliers, is an important topic for engineers as well as for procurement departments, because both of these were the main respondents of this survey.

The topic that manufacturers considered the second strongest pain point is the lack of integration of relevant stakeholders in the early phase of product development. From PAC's point of view, this holds significant potential to increase the quality of supplier collaboration (and, subsequently, to reduce the cost of product development). Integrating suppliers early on during bill-of-material development helps to avoid complex product change processes with suppliers at a later stage of product development. Working together as soon as in the product development phase is a significant topic that is backed up by another survey, the results of which show that over one third of respondents find that the lack of dedicated software in the early phases of product development is a strong pain point.

One third of respondents stated that the lack of integrated dedicated supplier collaboration software in the existing IT landscape is a strong pain point. This result shows that having integrated systems that allow all stakeholders to access consistent and coherent data from all sources is very important. Such relevant data includes, for example, product design data from CAD/PDM/PLM systems or supplier and compliance

requirement data from ERP systems. From PAC’s point of view, non-integrated, isolated systems carry the potential risk of various stakeholders (e.g. engineers and procurement) accessing different data. This, in turn, makes the entire product development process vulnerable to late changes due to uncoordinated design processes and decisions.

Looking more closely at internal collaboration processes between product development departments and procurement departments reveals some interesting results with regards to current pain points:

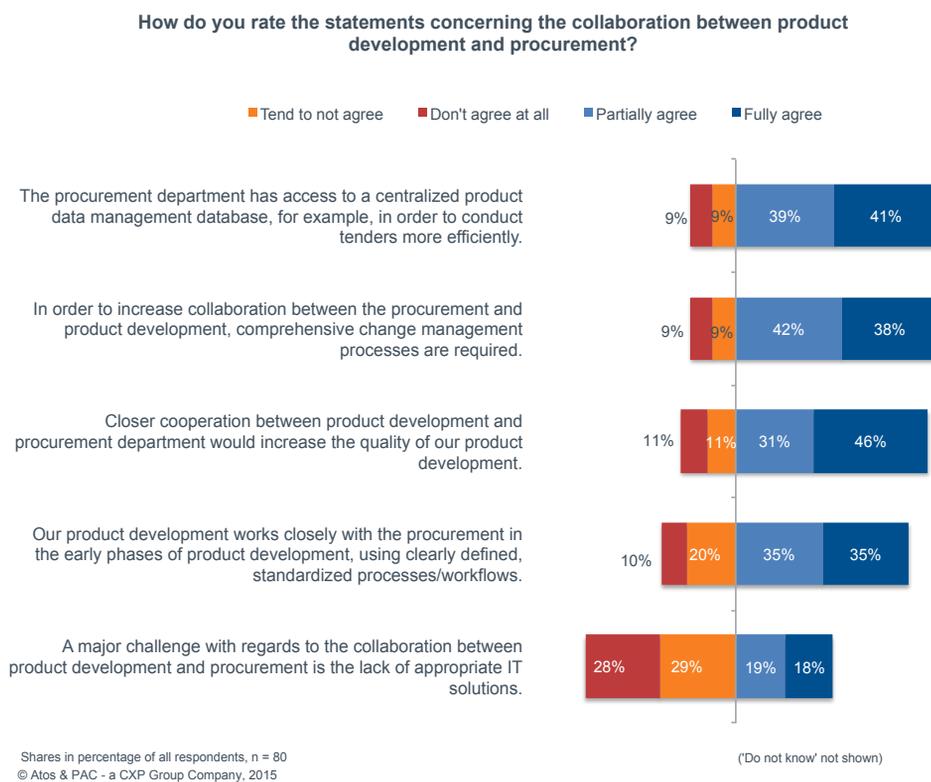


Figure 6: Status quo: Collaboration between product development and procurement

As shown earlier in this study (see Figure 2), about one third of respondents consider insufficient collaboration between the product development and procurement departments to be a strong pain point. Interestingly, manufacturers consider this topic to be a greater pain point than collaboration with suppliers.

Although the majority of respondents do not seem to see any major pain points when it comes to collaboration between the product development and the procurement departments, the vast majority of respondents (77%) stated that closer cooperation between these two departments would increase the quality of their product development. From PAC’s point of view, this holds significant potential to reduce the overall cost of product development. However, in order to realize this potential, comprehensive change management is also needed. The lack of appropriate IT solutions also plays a certain role here, and

survey results show that 37% of respondents consider the lack of appropriate IT solutions to be a major challenge (see Figure 6).

To summarize the findings of this survey, besides collaboration between various stakeholders being a “communicational” or “cultural” challenge, resulting from the problem of not “speaking the same language”, the current challenges and pain points also originate from business challenges. The latter includes the increase in the number and involvement of external suppliers and their input into products, and the resulting organizational challenges that arise, for example, from the fact that there is often a lack of standardized and structured collaboration processes. The survey results also reveal the existence of several IT challenges, such as the lack of appropriate IT solutions and the lack of integration of such solutions into existing IT landscapes, which, from PAC’s point of view, potentially reinforces existing cultural, business and organizational challenges and pain points.

3. IT CHALLENGES WITHIN SUPPLIER COLLABORATION

IT-related pain points are connected to a shortage of appropriate IT solutions and the lack of integration of such solutions into existing IT landscapes. They are also the result of a lack of syndicated supplier master data for all relevant collaboration participants (see Figure 5).

These IT-related pain points all highlight the obvious need for integrated and reliable IT platforms for data exchange in order to support communication and collaboration between all stakeholders – product development, procurement and suppliers – who are involved in the product development process.

Manufacturers today already have IT solutions in place, not only to support their product development processes (e.g. PDM/PLM solutions), but also to support internal and external collaboration processes. However, IT faces a major challenge when building an integrated and reliable IT platform for data exchange during the product development process. Not only does the IT platform have to take the different requirements of all stakeholders into account, but it also needs to address cross-departmental topics, such as master data management and security concepts, as well as collaboration and communication tools and functionalities.

Leveraging existing functionalities from PDM/PLM solutions is key and – from PAC's point of view – the first step to take when looking to increase the efficiency of collaboration processes within product development.

4. IT SOLUTIONS FOR SUPPLIER COLLABORATION

4.1 Key Solution: Product Lifecycle Management (PLM)

Today, product lifecycle management (PLM) solutions comprise the central applications for manufacturing company engineers working in the product design and development fields. These applications already bring a large set of benefits to the collaborative product design and product development process and are often designed to support a distributed product development process, whether this involves internal or external stakeholders. This is the case, for example, with PLM solutions that help to manage supplier relations from a commercial perspective, or with sourcing direct material and managing compliance requirements (see Figure 4). In addition, exchanging design data with external business partners or suppliers is a common functionality that PLM solutions also address. This demonstrates that PLM solutions already fulfill a fair number of stakeholder requirements concerning product development.

However, PLM solutions are also often highly customized to the individual needs and processes of the company (or business unit) in which they will be used. This makes it more difficult to collaborate with external suppliers, most of which run their own application landscape. Furthermore, security issues multiply with the integration of several different applications, e.g. when adapting to accommodate different suppliers using different IT systems in the same product design process.

Finally, although PLM solutions are designed to cater for the needs and requirements of product engineers and designers, they are unsuitable tools for helping corporate management or procurement meet their targets. These units normally use their own dedicated applications for their specific purposes and are unfamiliar with the functionalities and user experiences of PLM solutions. Therefore, manufacturers still need to enhance existing PLM solutions with functionalities that support secure and reliable data exchange platforms and build a bridge between all relevant internal applications and external third-party applications, i.e., those used by suppliers.

4.2 Survey Results: Planned Investments in IT Solutions for Supplier Collaboration

In terms of the various IT solutions and platforms that support supplier collaboration today, survey results show that usage of such solutions and platforms have reached different levels of maturity.

Which of the following IT solutions are already in use or planned for the next 2 years, not planned, but of interest, or definitely not a topic?

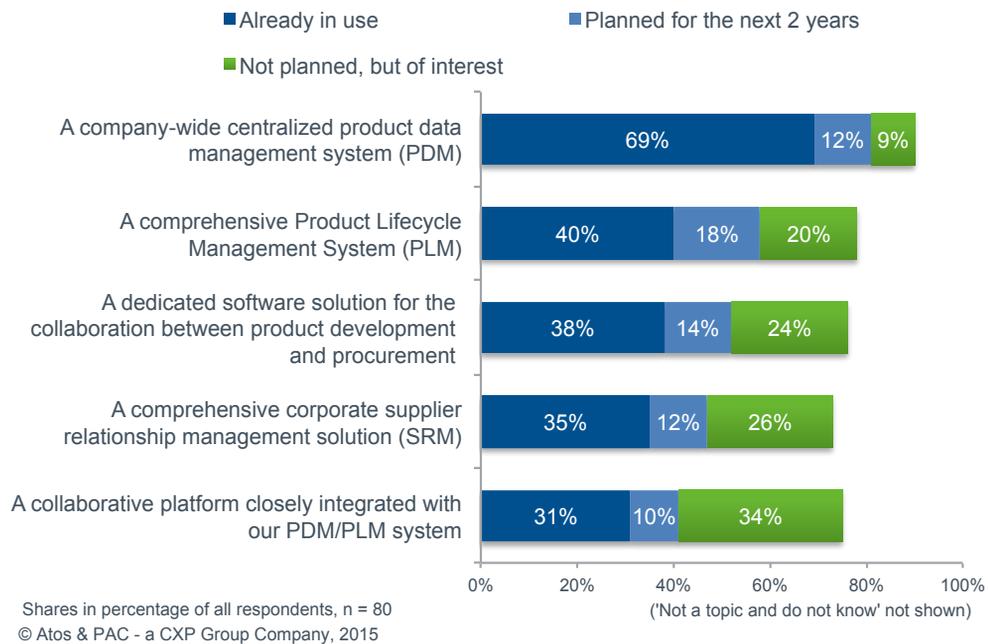


Figure 7: IT solutions for supplier collaboration: Status quo and investment plans

Product Data Management (PDM) applications, which represent the core of any PLM solution architecture, are already a relatively mature topic for manufacturers, and a majority of manufacturers already have such applications in place. Although comprehensive PLM solutions are not as mature as the core PDM applications, they continue to be of interest for manufacturers that do not have any such solutions in place yet, or have no concrete plans for investing in these.

Given that PLM solutions support a relatively large set of relevant processes, and only 40% of survey respondents have such solutions in place, PAC believes that there is still room for manufacturers to make improvements by developing existing PDM applications into more comprehensive PLM solutions.

Roughly the same percentage of manufacturers that already have PLM solutions in place use dedicated solutions for supplier relationship management (35%), and 38% of respondents use dedicated solutions for collaboration between product development and procurement. All of these dedicated solutions underline

that interfaces to manufacturers' other internal applications or to the applications of external suppliers are often costly to maintain.

Supporting secure and reliable data exchange using dedicated solutions is considered a first step towards more efficient collaboration within product development processes. However, platforms are needed to build a bridge between all relevant internal applications (e.g. PDM, ERP, SRM, collaboration tools) and external third-party applications (e.g. from suppliers).

Survey results show that only a minor percentage of manufacturers have IT platforms for supplier collaboration closely integrated with their PDM/PLM systems today. However, the largest percentage of manufacturers also stated that such a strategy was not planned, but of interest to them. (see Figure 7).

PAC believes that the demand for collaboration platforms that are closely integrated with the existing PDM/PLM systems will further increase with the growth in the number of supplier relationships that a manufacturer needs to maintain, or with the increased involvement of suppliers in the manufacturer's products.

With the increasing importance of platforms to build bridges between all relevant internal applications and external third-party applications, and with the growing number of external stakeholders, e.g., suppliers and business partners, the scalability of such platforms is playing an increasingly major role, thus moving cloud solutions into the focus.

Having approached the question of openness towards cloud solutions, the survey revealed that a significant number of respondents are open to cloud solutions: 45% of respondents can envisage using a solution platform that manages supplier collaboration within product development in an "as-a-service" model.

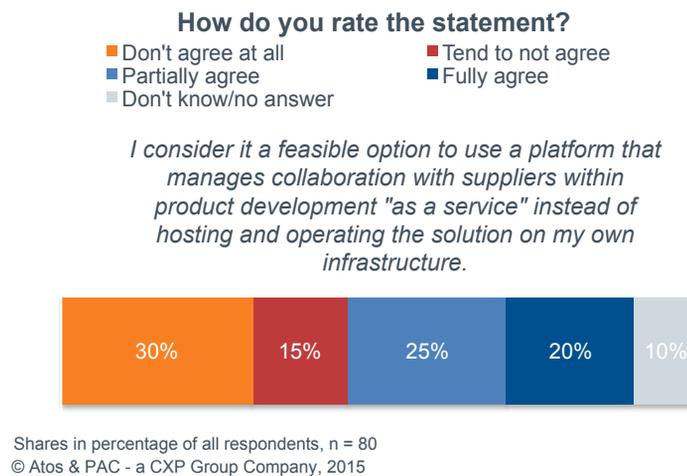


Figure 8: Supplier collaboration: Openness to cloud solutions

The survey results relating to IT challenges, and to the IT solutions and platforms that manufacturing companies are using today, reveal that integrated and reliable IT platforms for data exchange are needed to support communication and collaboration between all relevant stakeholders (e.g. product development, procurement and suppliers) within the product development process.

Furthermore, although PLM solutions in particular already bring a large set of benefits to collaborative product design and the product development process, there is still the need to enhance existing PLM solutions with functionalities that build a bridge between all other associated internal applications (e.g. those used by procurement) and external third-party applications (e.g. those used by suppliers). Subsequently, scalable IT platforms for supplier collaboration that are closely integrated with the overall PLM solution architecture will gain significant importance.

5. SOLUTIONS FOR SUPPLIER COLLABORATION FROM ATOS

For manufacturing companies, successful collaboration in the product design process requires both the correct methodology and the correct tools to meet the demand of all individual stakeholders. As a result, Atos has established Supplier Connect, a service offering that aims to coordinate the interests of all stakeholders involved, help them speak the same language and provide them with tools to accelerate and improve their product development process and overall product quality.

Atos' service offering builds upon a comprehensive consulting portfolio, including a standardized value chain maturity score, and a product development process assessment, as well as the development of a (joint) roadmap in order to enable collaboration within the customer's environment. Atos' Supplier Connect services include a dedicated software stack and standard use cases for efficient and consistent data exchange and management between internal and external stakeholders, which are integrated into the existing PLM application landscape.

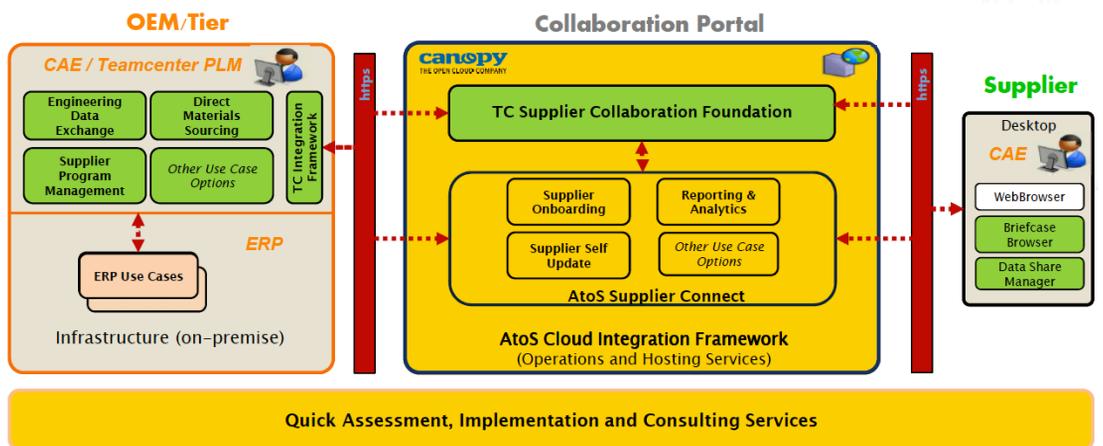


Figure 9: Solutions for supplier collaboration from Atos

If a company has no PLM application in place yet, Atos offers the integration and hosting of Siemens' Teamcenter, the PLM application developed by Atos' trusted partner in the Supplier Connect service offering. Siemens' Teamcenter already comes with a large set of functionalities for product designers. One of the most important benefits of the PLM application is that customers can rely on advanced program and quality management, enabled enterprise collaboration, design data exchange, the ability to manage substance compliance and enabled direct material sourcing. However, more generally, Atos can enable tool-based collaboration for product development based on any application landscape.

The software part of Atos' Supplier Connect offering, which can be delivered on an on-premise basis or powered by Atos' Canopy, based on an SaaS-model, represents a secure and reliable data exchange platform that builds a bridge between internal applications, such as PLM and ERP systems, and external third-party applications. With the help of this platform, manufacturing companies can establish a connected product development process with their external partners and improve overall communication with their

About Atos

Atos SE (Societas Europaea) is a leader in digital services with 2014 pro forma annual revenue of circa € 11 billion and 93,000 employees in 72 countries. Serving a global client base, the Group provides Consulting & Systems Integration services, Managed Services & BPO, Cloud operations, Big Data & Cyber-security solutions, as well as transactional services through Worldline, the European leader in the payments and transactional services industry. With its deep technology expertise and industry knowledge, the Group works with clients across different business sectors: Defense, Financial Services, Health, Manufacturing, Media, Utilities, Public sector, Retail, Telecommunications, and Transportation. Atos is focused on business technology that powers progress and helps organizations to create their firm of the future. The Group is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and is listed on the Euronext Paris market. Atos operates under the brands Atos, Atos Consulting, Atos Worldgrid, Bull, Canopy, and Worldline.

About PAC

Founded in 1976, Pierre Audoin Consultants (PAC) is part of CXP Group, the leading independent European research and consulting firm for the software, IT services and digital transformation industry. From strategy to execution, PAC delivers focused and objective responses to the growth challenges of information and communication technology (ICT) players. PAC helps ICT vendors to optimize their strategies by providing quantitative and qualitative market analysis as well as operational and strategic consulting. We advise CIOs and financial investors in evaluating ICT vendors and solutions and support their investment decisions. Public institutions and organizations also rely on our key analyses to develop and shape their ICT policies.

