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Automate Supply Chain Collaboration

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Learning Objectives

- Learn how to involve suppliers in business processes
- Discover automatic provisioning of data in real time
- Learn about bidirectional collaboration in real time
- Learn how to define and track supplier deliveries

Description

Sharing data with suppliers in real time, the right format, and the latest version is a challenge for global supply chains. Keeping everyone in the lifecycle posted about changes is barely possible without a real-time collaboration platform. Learn about the key benefits for supplier collaboration provided by Fusion Lifecycle cloud-based PLM (product lifecycle management) system: real-time data provisioning and acknowledgment; definition and tracking of supplier deliverables; integration of suppliers in change management activities

Speaker(s)

Sven helps customers, prospects, and partners in achieving excellence of business process execution with cloud based PDM/PLM solutions from Autodesk. He also engages in developing new collaboration solutions using connected cloud services of Forge. Sven is part of Autodesk's technical specialists' team in Germany.

Lee works as Technical Specialist based in the UK (United Kingdom). He helps customer in the UK, Benelux and Nordics understand the value of Autodesk's PLM solution – Fusion Lifecycle. Lee is extremely interested in learning / teaching integration and connecting to PLM to other Autodesk products and other vendors.

Business Challenge

Companies are under increasing pressure to get products out faster, cheaper, and better. This requires them to make better decisions, quicker decisions and to streamline all collaboration. It forces them to become efficient in all aspects before a product finally is manufactured. The supply chain is becoming more and more important as the availability of products we depend on is less reliable than before.

In the past, companies primarily focused on improving internal flows of information. Some companies have already achieved great results from automation & digital process flows with a PLM system for example. But as internal collaboration was and still is a big challenge for our customers - especially in COVID-19 times - only few customers optimized the collaboration processes and information flows with external stakeholders. However, this collaboration is equally important for the company's success. We see a lot of information being shared in both directions with external stakeholders along the products' lifecycles.



This forces the companies also to re-think their way of collaboration with external stakeholders:

- How to exchange required information with supplies efficiently?
- How to ensure they have access to latest information?
- How to push changes and ensure these changes will be taken into account?

Today's processes for supplier collaboration are mainly driven by repetitive steps performed manually by the users:

1. Extract information from internal systems
2. Possibly convert information (especially when sharing product design data)
3. Upload data to storage area accessible for partner
4. Inform partner about new data (usually done by mail)
5. The recipient must download the information and merge it within his environment

Everyone is working with his own set of information and has his own view on the data – both should be identical, but often do not match. There is no common view shared by everyone.

Learn more about these challenges in the given webinar of **Brian Schanen**:
<https://www.autodesk.com/campaigns/vault-plm/webinar-series/suppliers/on-demand>



Business Process Challenges

Disconnected supply chain collaboration is causing various challenges in daily life

- 1) Collaboration is asynchronous. It takes time before changes get recognized by all stakeholders as there is a lot of manual processing in between
- 2) At the same time, changes happen all the time and might even overlap
- 3) Given the delays during information sharing, it is impossible to recognize and to act on delays in time
- 4) Standards of partners involved are different: Item numbering schemas do not match for example
- 5) A send & forget approach does not ensure that changes are taken into account by the supplier.
- 6) After data has been changed internally, one may also forget to inform the supplier accordingly

In the end, companies do not exactly know about the perspective of their suppliers. They simply do not know if the suppliers have enough & the right information.

Technical Challenges

Besides organizational challenges, there are also technical challenges when sharing data:

1. Media

What is the right media for data sharing? It must be secure, reliable and able to deal with large & complex product design data. In reality, however, a lot of customers continue to share information by mail, knowing that this limits the size and does not ensure proper delivery

2. Data Format

One must ensure that suppliers can use the given data format that is being shared. This is a challenge especially when sharing product design data.

3. Naming

How do you name your data, your files? You may have to rename them when extracting data to provide information about part number, revision etc

4. Different Standards

Same data is managed in different systems using different numbering schemas & standards. This causes additional effort to manage data properly.

5. Contact Person

How to make sure that the contact person is not in vacation or absent? Whom to approach in case they are?

6. Acknowledgement & Traceability

How to establish and track acknowledgement of data being sent to the suppliers?

7. Human Errors

Prevent errors in recognizing changes within data

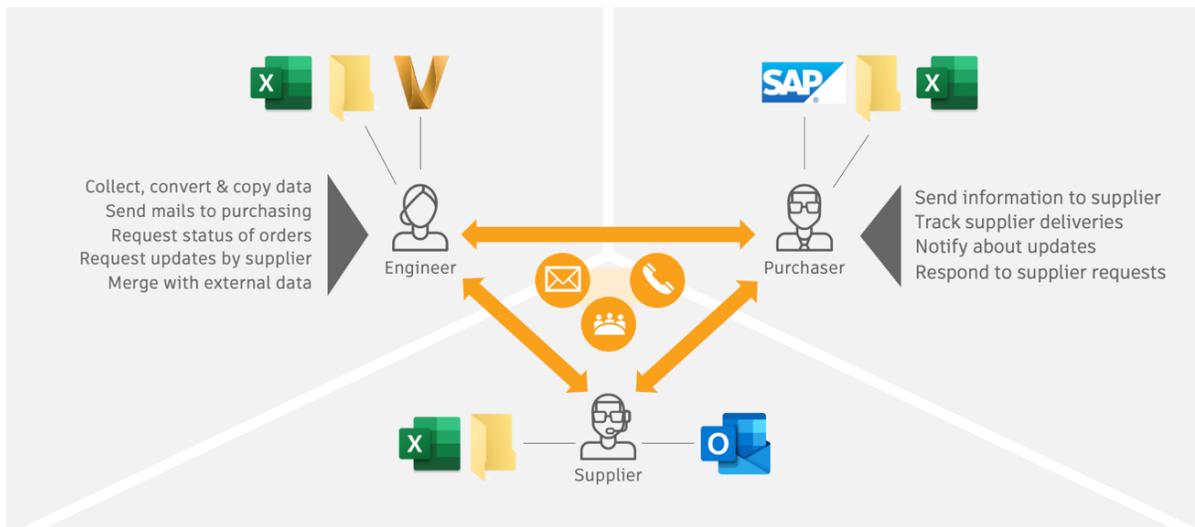
Manual Supplier Collaboration

Multiple stakeholders are involved in supplier collaboration processes: Engineering, Purchasing and the suppliers at least. Usually, they all work in their own environment and used dedicated systems to manage relevant information: Engineering uses PDM as main system while Purchasing uses ERP (like SAP as one example). Collaboration with suppliers usually is done by mail.

In daily life, a lot of direct exchanges happen between these stakeholders

- Engineering informs purchasing about the release of components
- Purchasing sends information to the selected suppliers
- Supplier contacts engineering for questions.

As there is no common collaboration platform, this usually all happens by mail, phone, and direct meetings. Collaboration therefore is not transparent and is a manual effort, keeping stakeholders busy with non-value-add and error prone activities like extracting data, converting data, merging data, requesting data, and sharing data.



To better handle this information flow, stakeholders often keep their own repository of data to manage the data exchanges. They keep track of what has been shared and what has been received. This also includes personal Excel files to manage to-do lists and to track supplier deliveries & communication.

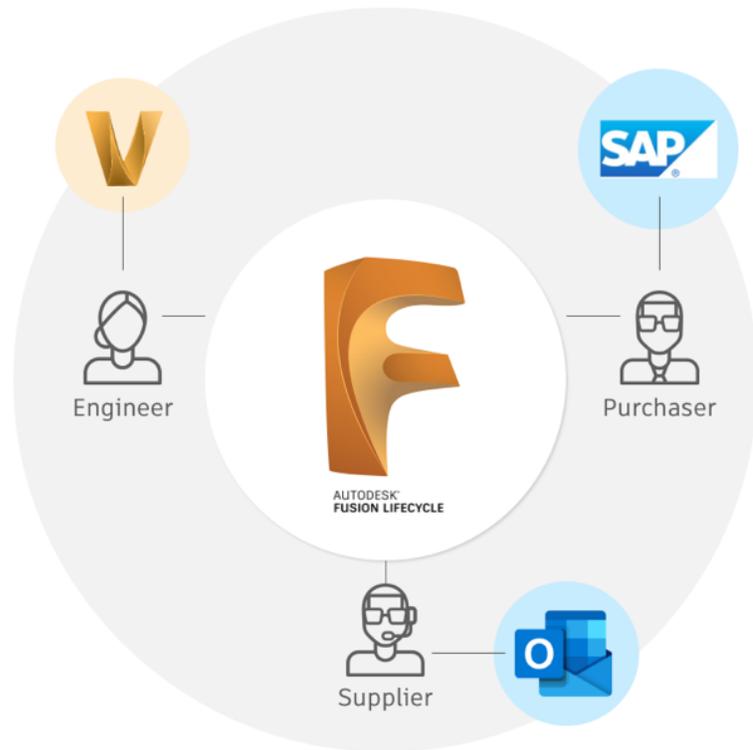
Automate Supplier Collaboration

To automate supplier collaboration, a common collaboration environment can be established. A platform that addresses all the needs of all stakeholders at the same time.

This helps to reduce manual data exchanges, provides the same data for all stakeholders in real time and manages collaboration processes. Also, this removes the need of local copies and manual tracking of information. All is at hand for anyone, finally providing transparency.

Stakeholders no longer have to extract, send, merge and request data. This relieves employees from a lot of manual activities, leaving more time for their real work. At the same time, it eliminates the human errors related to these activities.

The platform also can connect to existing systems and exchange data (e.g. design data with Vault and supplier master data from ERP) for an automated & reliable flow of information.



Real Time Collaboration with PLM

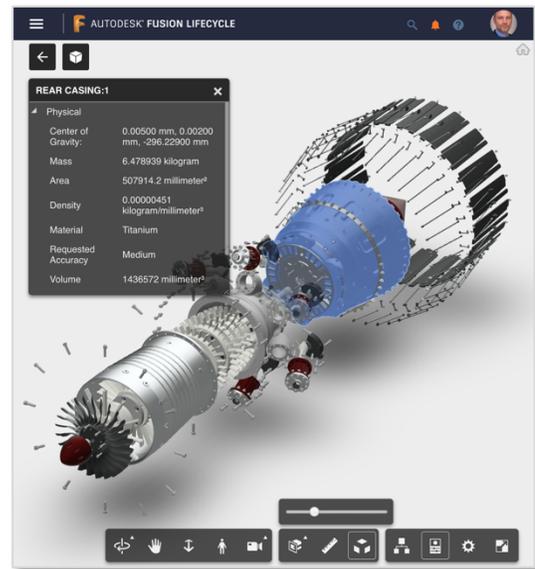
The use of Autodesk’s PLM solution [Fusion Lifecycle](#) as common collaboration platform with suppliers provides key features to allow for a smooth collaboration without delays and providing full transparency.

Common Data Source

All stakeholders make use of a common and secure online storage area that can manage product design data. As such, it does not only provide capabilities to manage files, but also Bill of Materials information, item master data, item attachments, item revisions and item references.

Users also benefit from the embedded viewer being able to visualize any CAD file without upfront conversion.

Automatic Change Logs keep track of changes in the background.



Online Data

PLM not only manages files, but also master data and process data. This may include

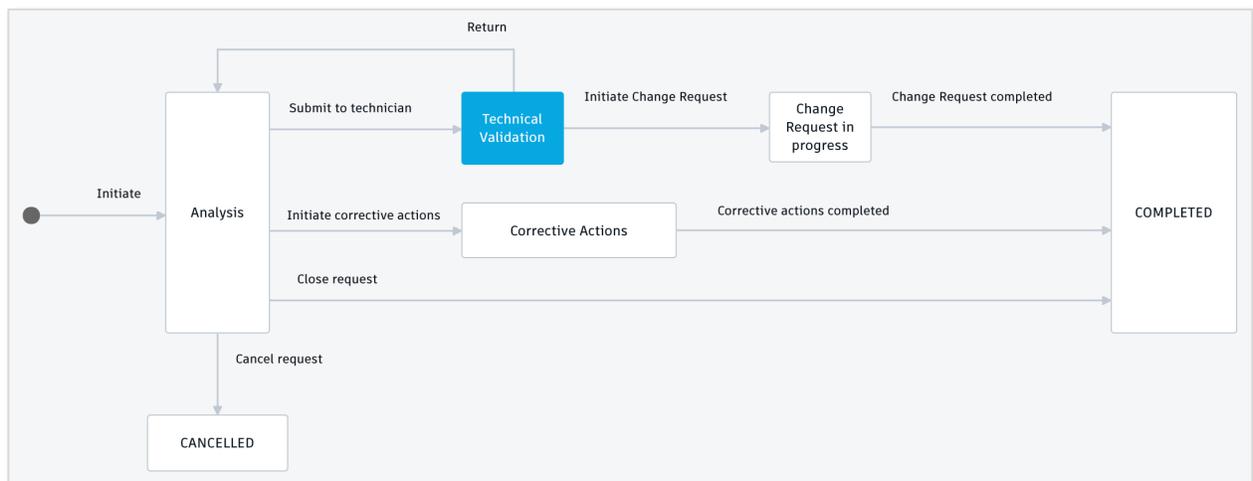
- Tasks
- Change Requests
- Change Orders
- Supplier Master Data
- Order Information
- Deliveries
- Meeting Notes
- ...

Item Descriptor	Progress Bar	Flag	Last Upda...	Days Remaining
TK-0106 - Request drawing update by supplier	90%	...	14.01.2019	2
TK-0112 - Validate new customer requirement	80%	.	14.01.2019	16
TK-0116 - Provide Costing	75%	...	01.03.2019	-8
TK-0111 - Design Review	75%	...	14.01.2019	24
TK-0119 - Concept Design	25%	..	14.01.2019	24
TK-0199 - Electronics	0%	?		0
TK-0201 - Documentation	0%	?		21
TK-0204 - Provide Technical Specification	0%	?		-522

This is not the complete list of all entities that can be managed in PLM. There is much more available in the standard solution. In addition, this list can be adjusted with PLM’s configuration utilities. This also enables adjustment to the properties & forms being used to manage online data.

Process Driven Collaboration

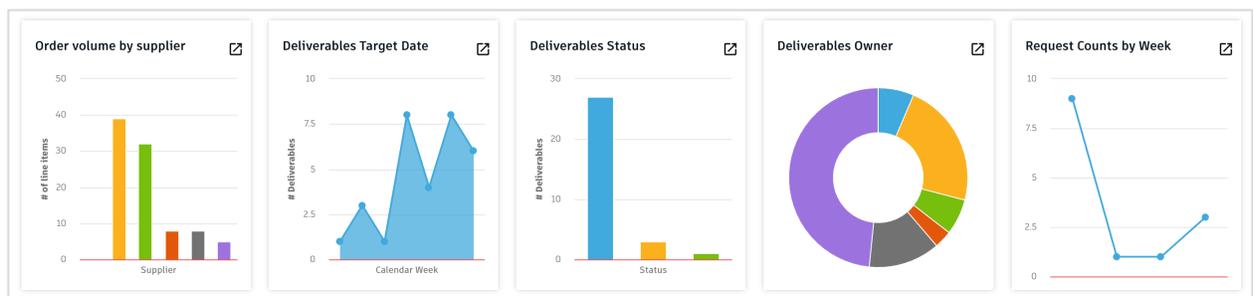
Processes are defined in PLM and attached to data & files being managed inside PLM. These processes drive the handover of data across the various stakeholders. They also define relevant activities and decisions to be made by the stakeholders involved and manage a task lists for each user. Such processes make sure that people get notified about relevant data and activities in an automated manner.



Real Time Reports

All data & processes information of PLM can be used in real time reports. For example, this enables to list all deliveries of a given supplier that are due - or all requests that were sent by the suppliers.

Graphic charts can be used in addition to derive KPIs and reveal trends. Such graphs help to take proper action when it comes to delays and unexpected requests.



Connected Cloud Collaboration Platform

For seamless exchange of product design data, Autodesk Fusion Lifecycle [can be connected to existing Vault environments](#). Once connected, PLM will receive all released product design data in a defined format to be shared with downstream processes and suppliers.

An efficient collaboration with the supply chain may also require a connection of PLM to ERP (with SAP just being a placeholder). PLM may then receive supplier master data and order information from ERP to automate sharing of information with suppliers.



Autodesk Solution Benefits

Fusion Lifecycle meets the needs of an automated supply chain collaboration platform:

1. Security is built in

Access to data is granted by a multi-level access control mechanism based on roles, groups, ownership, and permission levels. With this setup, data can be shared securely with external stakeholders, making sure that externals cannot see data of other suppliers but also get able to provide data and to upload files

2. It is easy to use

A modern user interface provides guidance and a consistent navigation schema, allowing an efficient usage also for first time users and casual users

3. It's Born in the cloud

The system is provided as SaaS solution, removing the need to share software updates and installers with all suppliers just to enable collaboration. Everybody is on the same software level automatically

4. It grows with the demand

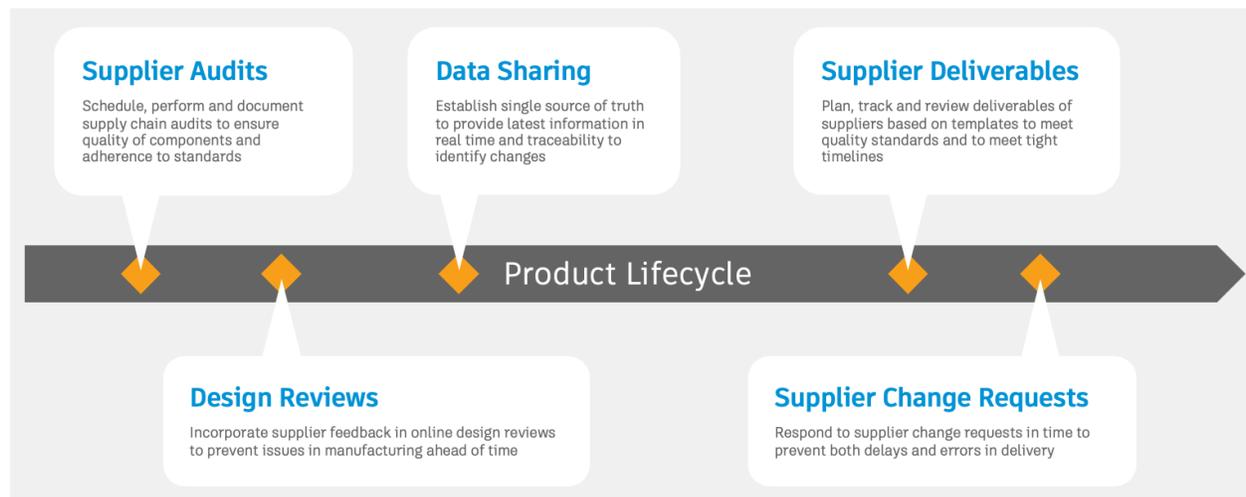
The infrastructure scales with the demand automatically, allowing for a small start and a large user base after a successful ramp up. Cost does not scale at the same level thanks to the Enterprise subscription model providing cost effective access for all suppliers worldwide

Best In Class Global Collaboration



Supplier Collaboration Use Cases

The flexibility of PLM enables to address the needs of various scenarios and use cases. It can deal with different systems, different process flows and different business process issues. Based on its building blocks and standard features, it can manage the key supplier collaboration use cases shown below with ease. Further use cases can be configured on demand with the configuration utilities of course.



Supplier Audits

Auditing the supply chain is becoming more & more important in context of legal regulations, environmental impact, and sustainability. A proper auditing system provides relevant information when choosing the right partners – which might not be the ones you worked with for most of the time. Additionally, in COVID-19 times, you may be seeking new partners to compensate for constraints in your current supply chain.

While these audits may already be managed in your ERP system which holds the supplier master data, there is the need to exchange data with your suppliers. This may include certificates or information about actions taken based on audit findings.

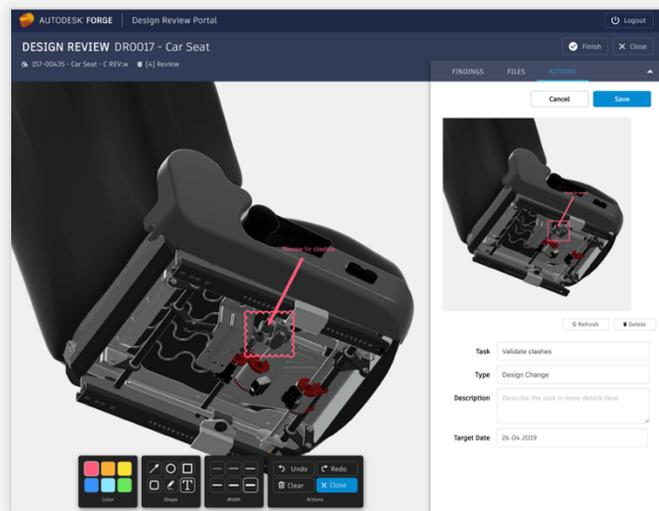
Using PLM as common platform enables suppliers to provide data in a traceable manner in real time. With PLM, both companies also share a common perspective on relevant data.

See the solution in action: <https://www.youtube.com/watch?v=US8TWnk-H-o&t=1s>

Design Reviews

During development processes, customers also may want to perform reviews with their suppliers. For example, they may want to review the design of external engineering offices or get the own design reviewed by a contract manufacturer.

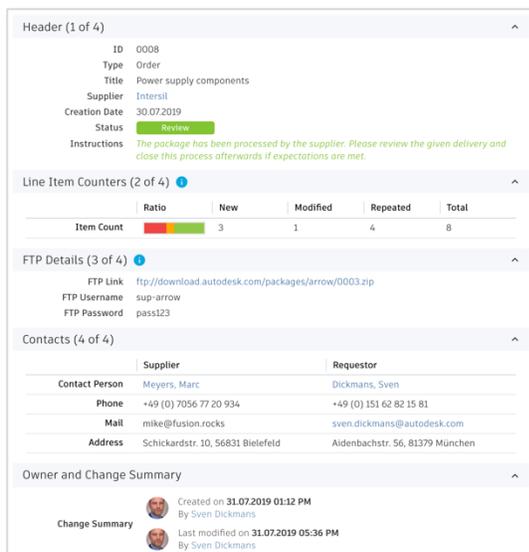
Using Vault PLM, this becomes very efficient as released data will be published to the Cloud automatically for review. Visualization of design can be done by simply using a browser.



To better manage the review processes, customers can schedule these reviews in PLM and connect the data for review to this process. This will grant access to the selected stakeholders to the design automatically. The Design Review process also provides capability to capture feedback and to derive corrective tasks from a review. One can also schedule the repetition of a review if needed to validate completion of these corrective tasks.

This process can further be enhanced by a review portal based on Forge technology, allowing for a best in class usability with a dedicated review user interface (as shown in screenshot).

See the solution in action: <https://www.youtube.com/watch?v=rhr3VUSG1Vk>



Data Sharing

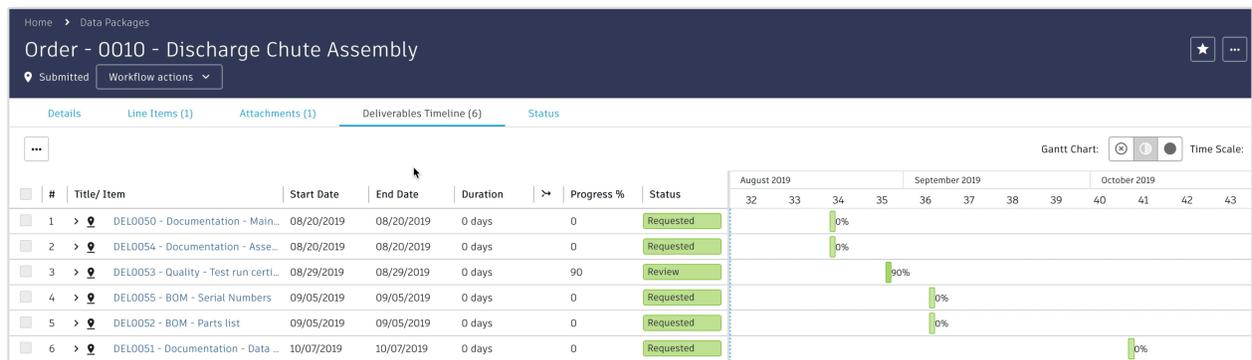
Along with an order, customers may have to share product data with the supplier, consisting of Bill of materials data and design data. PLM replace the manual conversion and transfer of files with online access to data. It also ensures that the supplier can open the data with the viewer that is built in

Finally, to secure manufacturing processes, customers may ask the supplier to acknowledge receipt of the package. If this acknowledgment is not done within a given amount of days, the purchaser may be notified automatically.

See the solution in action: <https://www.youtube.com/watch?v=GKX1WhqYTxo>

Supplier Deliverables

Along with sharing information related to purchase orders, PLM can also manage & track expected deliverables of the supplier - and even manage target dates for these. Suppliers then can provide these deliverables in PLM directly and respond on each deliverable request when complete. This helps to align timelines with suppliers.



See the solution in action: <https://www.youtube.com/watch?v=ftdEZcP3rT4>

Supplier Change Requests

Supplier Change Requests help to incorporate feedback of suppliers in engineering processes. Using these requests, suppliers can share feedback online that will be forwarded by PLM to the appropriate internal stakeholders.

Today, these ideas usually get lost and the supplier may decide on his own because of time pressure and lack of response from his customer. But if the same components will be ordered again later on or a replacement part is ordered, the documentation will not reflect the actual component being delivered.

Therefore, customers should listen to the feedback of suppliers and provide them with the chance to send feedback directly in PLM. This feedback then will pop up internally automatically to drive a proper decision in time.

See the solution in action: <https://www.youtube.com/watch?v=6sYqiEiSM4Y>

Conclusion

With PLM ...

... customers and suppliers have all data at hand at any time in latest version

... everyone is up to date and informed about relevant events

... stakeholders don't have to bother with manual data sharing

... human errors get reduced and delays get removed

“Before implementing the PLM system, processing a larger order with about 20 positions took one day. Today it's not even 5 minutes.”

Thomas Schnell, Feige Filling