

# Agility and Consensus in DFM Reviews

## A Managers Guide for Soliciting Stakeholder Feedback During Design for Manufacturing (DFM) Process

This guide offers suggested ways to improve communication within your supply chain. Feedback from DFM reviews impacts everything, including manufacturing, costs, timing and eventual customer satisfaction which is why it's so critical to be a good listener. Asking the right questions can help balance agility with consensus in creating the best manufacturing process possible to bring your product to market.

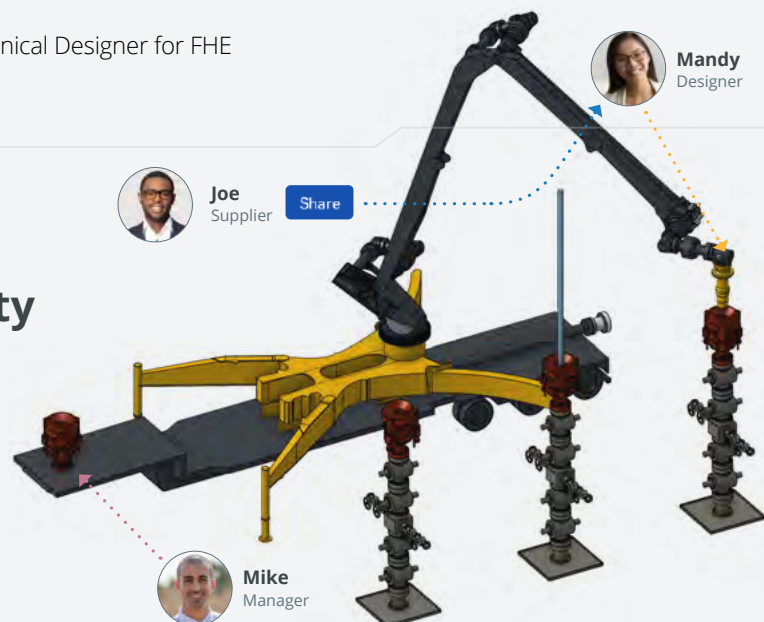


*"Making sure our vendors have the most up-to-date drawings provides immediate savings. Anytime we get a manufacturing mistake, it could cost several thousand dollars... the clarity that Onshape gives us in our communications with vendors is invaluable."*

– Matthew Kibler, Senior Mechanical Designer for FHE

## Onshape's Enterprise Light User Access Enables Better Third-Party Collaboration and IP Security

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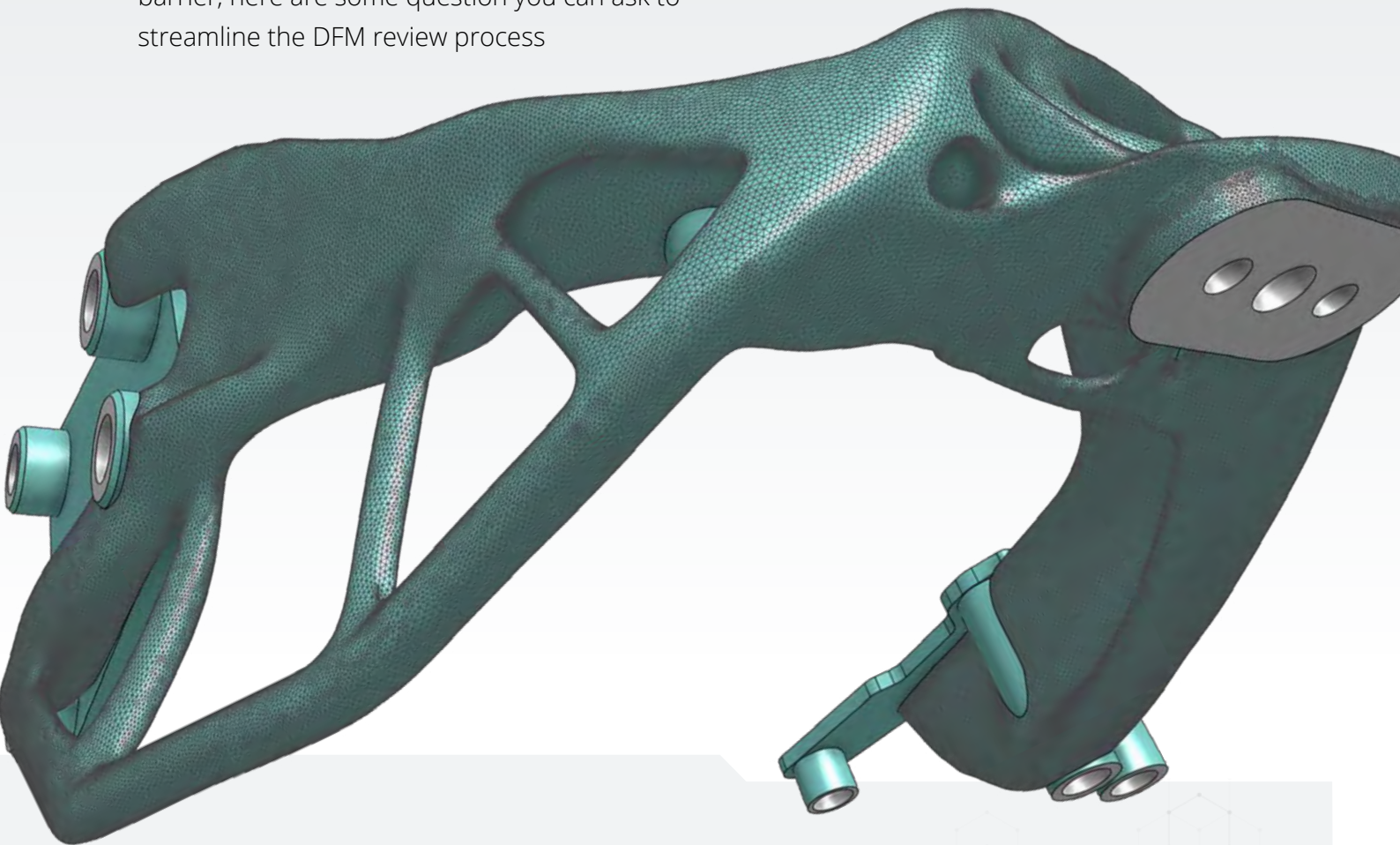


# Knowing Who and What to Ask?

## A Managers Guide to Common DFM questions

Most product design teams are isolated during the design process and do not have enough contact with other departments. When the flow of information and feedback are restricted, it can lead to problems with the final product. This is where cross-functional design comes in. Cross-functional design is the process of having members from different departments involved in the product's lifecycle. As a result, product designers work better when they have input from other team members on different aspects of their process, like engineering, marketing or sales. Only Onshape makes it easy for design teams and manufacturing teams to easily and securely communicate and collaborate in real-time at any phase of the design process.

With Onshape you can easily share models via a URL, providing assembly line team members with real-time access to current models. Removing the communication and collaboration barrier, here are some question you can ask to streamline the DFM review process



**When designing products,  
consider the manufacturability of  
your design right from the outset.**

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## Manufacturing Suppliers and Production Teams

DFM reviews focus on reducing production time and costs while ensuring products meet requirements, regulation, and quality standards.

Here are some questions your can ask of assembly and installation team your manufacturing suppliers and production teams during DFM reviews



### Review all the questions to ask your manufacturing suppliers and production teams during DFM reviews.

- Are there standard parts or more cost-effective parts which can be used?

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- Can any complex mechanisms be simplified?

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- Are there areas of low strength that should be improved?

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- Are there better materials to use, such as more sustainable materials or materials better suited for the manufacturing process?

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- Can less material be used, can parts be hollowed or made lighter in weight with similar strength?

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- Will my manufacturing technique impact the parts aesthetics, such as mold lines or removal of additive supports, gates or runners?

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- Can I reduce the number of post-processing operations such as machining, surfacing, etc?

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- Are the fillets, pockets and other CNC features standard for the manufacturing tooling?

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- Are the parting lines, cooling channels and draft angles appropriate for any mold designs?

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- Are there any non-standard drill bit sizes or overlapping drill hits which would cause problems for fabrication and assembly?

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- Do the design tolerances meet the manufacturing process capability?

### Review your team's usage of best DFM Practices.

- My team knows how to control access to sensitive data?**  
*Onshape allows managers to define access by project, role or job function.*

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- My team knows how to do a live, collaborative design review or editing session?**  
*Onshape uniquely has a multi-user real time follow mode which supports synchronized viewing of models between multiple users.*

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- My team has a Sandbox, to experiment, ask and answer questions in?**  
*Onshape supports versioning of designs and parallel development of design variants with branching, comparing and merging operations.*

## Assembly and Installation Teams

DFM reviews can be limiting as they often exclude input from downstream teams such as those handling the product's assembly and installation orders. Discussions with these teams can be abstract as they occur before the product is created. Traditionally using PDF documents to relay specs and instructions have been as good as it gets, making the decision process about the product assembly harder and more prone to quality issues.

Here are some questions you can ask assembly and installation teams during DFM reviews



### Review all the questions to ask your assembly and installation teams during DFM reviews.

- Can I minimize the number of assembly directions?
- Can I reduce the reduce the number of parts overall?
- Can I reduce the number of different parts in the assembly by use of standard content?
- Can I reduce the number of joining operations such as glue, welds, screws, rivets, fasteners or bolts?
- Is it obvious how to orientate my design for assembly?
- Will the assembly process affect the final products aesthetics?
- Is the product mounted or secured utilizing existing standard methods and hardware?
- Is there safe access to key components, and external clearances for connecting any power, water or ventilation lines?
- Can the product be built modularly or concurrently in stages by different teams?
- Is there clearance and access to all critical components?
- Are my parts safe and easy to handle in terms of weight, shape or sharp edges?
- Does assembly require special tools?

### Review your team's usage of best DFM Practices.

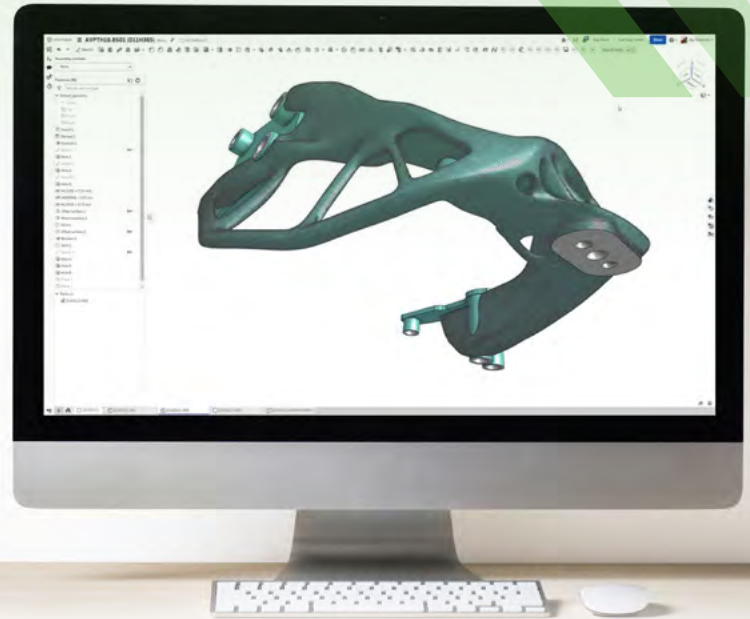
- My team can onboard employees at a new supplier or manufacture quickly?**  
*Onshape supports view-only sharing and flexible Single Sign-On (SSO) licensing with both a Full and Light Enterprise plan.*
- My team knows how to solicit, document and archive feedback from manufacturing teams?**  
*Onshape supports mark-up and commenting, even specifically tagging features, sketches, parts, drawings and mate connections, so it's very clear who gave what feedback and on which part of the assembly. Store the history of your collaborative conversations with your product design.*
- My team knows in real-time when manufacturing teams have received and reviewed their designs?**  
*Onshape can send notifications of activities such that users can receive email notifications on changes or comments in a design. Set actions for users within Onshape.*

## Logistics, Packaging and Distribution Teams



Good product designs also incorporate feedback on the packing and delivery of the product. The final packing has to be robust including transportation details such as stresses like vibrations and even loading and unloading instructions.

Here are some questions you can ask your logistics, packaging and distribution teams.



### Review all the questions to ask your logistics, packaging and distribution teams during DFM reviews.

- Can I minimize the amount of handling of the product or make the product easy to handle, rotate and manipulate such as with handles?

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- Can the assembly break down into sub-assemblies with easy part nesting for packaging?

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- Are there packaging materials that are considered standard that are not being used?

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- Can the total amount of packaging be reduced?

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- Do you have documented packaging instructions?

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- Can the part be confused with another part in the packaging, are they too similar?

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- Is there an opportunity for automation of packaging operations?

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- Are components spaced appropriately as to not cause problems with pick & place packaging automation?

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- Could un-boxing potentially damage the product?

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- Can the product be secured and packaged in a less labor-intensive method?

### Review your team's usage of best DFM Practices.

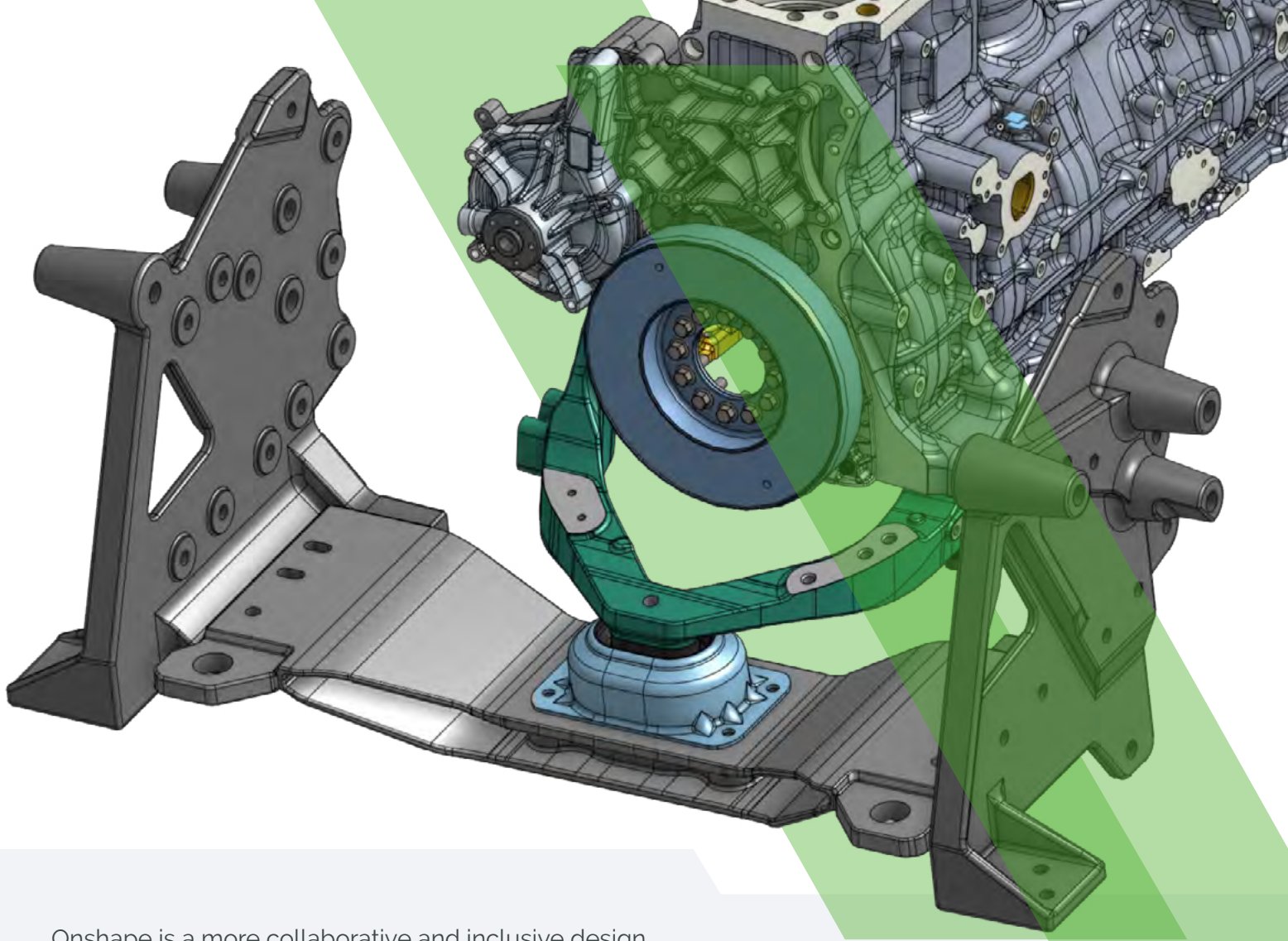
- My team has a secure process for exporting, zipping and sharing data which is followed to protect company IP?**  
*Onshape makes secure sharing easy with role-based collaboration controls and cloud-native communication tools.*

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- My team and processes work smoothly with globally distributed employees?**  
*Onshape supports remote workers in dispersed teams with the ability to work anywhere, anytime and on any device.*

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- My team can give a status update as needed to management?**  
*Onshape's analytics and built-in PDM system offer real-time visibility to the status of projects and users activities.*



Onshape is a more collaborative and inclusive design platform that enables you to have more robust DFM reviews. With Onshape, you can securely share view-only CAD models and drawings with manufacturers, enabling you to host real-time DFM reviews with multiple users simultaneously. Onshape provides communication and collaboration capabilities, such as: follow mode and task assignments, with tools that allow anyone who is a part of the DRM process to ask questions through comments, and markups.

Built for the cloud, Onshape's unique architecture enables multiple users to concurrently communicate and collaborate on the same model, at the same time. No matter how dispersed your design and manufacturing teams are, Onshape provides the best tools to enable more robust DFM reviews earlier in the development cycle.

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and experience more effective  
communication today!**

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CAD SOFTWARE IN THE WORLD**

