How 3Shape Is Changing Dentistry with Jama Connect®

3Shape

When you're one of the most forward-thinking dental companies on the planet, stagnation is not an option. Launched in Copenhagen by two ambitious graduate students, 3Shape has been pioneering a growing, industry-leading portfolio of 3D scanners and CAD/CAM software solutions since 2000.

Its ground-breaking, intuitive technologies — which place a high emphasis on functionality and ease-of-use — have seen big results, as the company has grown to over 1,500 employees with customers in over 100 countries.

Overcoming Increasing Complexity

It takes constant innovation to change the dental industry. And in the past few years, 3Shape realized its process for managing requirements was becoming cost ineffective due to the manual nature of its chosen tool stack.

3Shape's products — which rely on a combination of hardware and software — are increasingly becoming more sophisticated and involve more requirements.

Simultaneously, the dental industry as a whole is evolving rapidly and adding stricter safety standards that also bring new requirements. Since 3Shape develops dental equipment, it needs to comply with international standards such as ISO 14971, ISO 13485, IEC60601-1:2015, and IEC 62304.

Previously, the 3Shape team was handling its requirements through Word and Excel documents while performing manual traceability. When companies are building safety-critical releases like dental equipment, the chance of error that can be introduced from manual traceability increases with product complexity. And that can be a challenge for proving compliance.

"The complexity of some of the projects was reaching a point where they couldn't be scaled anymore just by adding more people," says Lars Jensen, Product Quality Assurance Manager at 3Shape.

Opportunities for Efficiency

For a company like 3Shape that stays on the cutting edge of its industry, the amount of time needed to manage requirements and execute traceability manually was becoming unacceptably long.

"If you've done a traceability matrix in Word or Excel, you can't really trust the results for even two minutes after completion because people are always trying to change the requirements," Lars Jensen says.

The burden of manually managing requirements at 3Shape was largely falling on project managers and team specialists, and it was estimated that they spent roughly 20% of their valuable time on this task.

A higher rate of expediency was also needed with the reviews of requirements. In order for the project manager to review and provide feedback on a project's requirements, a lengthy meeting, set up in advance, was needed. And ahead of that meeting, teams would need to review all of the requirements in bulk as well as approve them.

WHAT IS INEFFICIENT REQUIREMENTS MANAGEMENT COSTING YOU?

- **600K DKK***
  Roughly the average annual salary of a project manager in Denmark

- **120K DKK**
  The annual cost of a project manager spending 20% of their time performing manual requirements management and traceability tasks instead of innovating

* Source: Glassdoor.com

Searching for a Solution

3Shape knew it was in need of a new solution for its requirements management process, but it wasn't sure where to start. Lars Jensen knew he wanted something that could improve compliance and speed up development cycles while conserving internal resources.

After some research, Lars Jensen compiled a list of requirements management solutions and narrowed it down to a handful of prospects.

The company tried a six-month pilot with a Jama Software competitor. While its hardware teams seemed satisfied with the piloted platform, the software engineers felt the proposed solution lacked usability.

3Shape then took a closer look at Jama Connect™, which managed to win both the hardware and software teams over in less than a month. 3Shape especially liked how Jama Connect supported re-use/variant management, delivered a superior process for software engineering, and offered a better overall user experience.

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Jama was the obvious choice because it's something that everybody could agree on."

Lars Jensen, Product Quality Assurance Manager, 3Shape

User experience and functionality are areas which 3Shape highly values in its products, and this became a must for inclusion in their requirements management solutions as well. For instance, if a team is using a complicated legacy solution, there may be only one or two team members who understand how to use it. This impacts everything from visibility into a project to adoption of the tool itself.

Conversely, a more modern solution that's simple and intuitive to use can help get a greater number of team members involved in the requirements management process, allowing them to edit, comment, and review requirements. The result is a development team that's better aligned, and which produces higher-quality requirements and, ultimately, products.

Improving the Development Process

As per best practices for successfully implementing Jama Connect, 3Shape used Jama's Professional Services team to get up and running quickly on pilot programs. And the positive first impressions regarding Jama's user-friendliness were instantly solidified.

"The feedback I've gotten is that the user interface is simple and easy to use," Lars Jensen says. And in an industry rife with complexity, a solution's ease of use is imperative to facilitating clear communication and maintaining organizational alignment.

Previously, in order to even find requirements, 3Shape team members had to log in to the document system, navigate to the right folder, open a document, wait for it to load, then scroll down through all the requirements to find the right one.

"With Jama, when you log in, you're usually already in the project you used last time," says Poul Martin Ravn, Systems Engineer at 3Shape. "And it's pretty easy to find the project you want and the requirements quickly."

Just from the data migration to Jama Connect, 3Shape was able to easily identify issues within its requirements, such as conflicting statements and duplicates.

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The whole migration of the documentation over to Jama Connect was an eye-opener, especially how it revealed the large number of duplicate documents we had that could be significantly reduced."

Martin Sandau, Project Manager, 3Shape

Moving from a document-driven requirements management process to a more modern approach, Jama Connect is providing 3Shape with increased visibility across its projects.

Streamlining Processes for Faster Product Releases

One of 3Shape's previous challenges was managing a growing list of requirements and, when things changed, ensuring the necessary analysis to understand how those alterations affected other areas of development. And that process can consume both time and valuable resources. With Jama Connect, teams get instant impact analysis, so they can see what features are impacted both upstream and downstream.

Testing is another area where 3Shape is seeing increased efficiency. Jama Connect helped the company identify some redundancies within its testing strategy and cut the length of its process. That, in turn, has the potential to reduce 3Shape's testing process from weeks to hours, enabling the company to release products faster. "If we are able to introduce new products to the market just a few weeks earlier, then that would be very valuable," Lars Jensen says.

Since traceability matrices are maintained inside Jama Connect, 3Shape can easily access its information with just a few clicks, drastically reducing the amount of time and effort required to facilitate and pass an audit. And, thanks to the improved collaboration capabilities from Jama Connect, 3Shape no longer needs to disrupt core engineering projects by scrambling a team together to review and approve requirements.
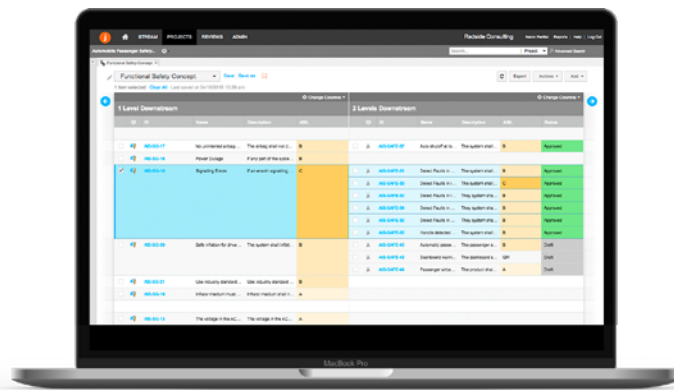
Finally, 3Shape team members are feeling the freedom that comes from moving beyond the tediousness that comes with managing requirements and traceability with documents.

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> We all want to spend more time being creative and innovating our products, and Jama Connect gives us more opportunities to do that."
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> **Lars Jensen**, Product Quality Assurance Manager, 3Shape

Learn more about how Jama Connect can help improve your [product development](#).

ABOUT JAMA SOFTWARE

Jama Software® is focused on maximizing innovation success in multidisciplinary engineering organizations. Numerous firsts for humanity in fields such as fuel cells, electrification, space, software-defined vehicles, surgical robotics, and more all rely on Jama Connect® requirements management software to minimize the risk of defects, rework, cost overruns, and recalls. Using Jama Connect, engineering organizations can now intelligently manage the development process by leveraging Live Traceability™ across best-of-breed tools to measurably improve outcomes. Our rapidly growing customer base spans the automotive, medical device, life sciences, semiconductor, aerospace & defense, industrial manufacturing, consumer electronics, financial services, and insurance industries.