Amphenol

Industry:
INDUSTRIAL EQUIPMENT

The Challenge

Amphenol Fiber Optic Products is one of the world's leading providers of connectivity equipment for the communications, IT/datacom, mobile and medical device industries. The global engineering team was seeking a Product Data Management (PDM) system to keep track of design changes for hundreds of products between its teams in the United States, Mexico, China and Vietnam.

Results

- Onshape's built-in data management enables real-time collaboration between Amphenol's global engineering teams, reducing previous communication delays.
- Switching to Onshape allowed Amphenol to get CAD and PDM for the cost they were previously paying for just CAD - resulting in $80,000 to $120,000 in savings upfront.
- Real-time business analytics help Amphenol executives and managers identify potential design and manufacturing bottlenecks earlier, enabling them to reallocate company resources in a more timely manner.
- As a Software-as-a-Service (SaaS) platform, Onshape also reduces IT overhead, eliminating the need for installs, upgrades, licenses, servers, networking equipment and the time required to manage them.

> *"There are so many facets to conventional PDM systems that all just get smoothed out with Onshape. Instead of thinking about IT, I can now focus more on R&D and manufacturing."*

– Ken Capozzi, Global Director of Engineering
at Amphenol Fiber Optic Products

Amphenol Enables the Next Generation of Mobile and Broadband Networks

Leading developer of fiber optics relies on cloud-native Onshape for real-time CAD collaboration between globally distributed R&D teams

As the demand for video-conferencing tools and faster media streaming increases exponentially, cable and internet companies are rushing to upgrade old copper phone lines and coaxial cables with fiber-optic networks. Fiber internet can send data as fast as 70 percent of the speed of light.

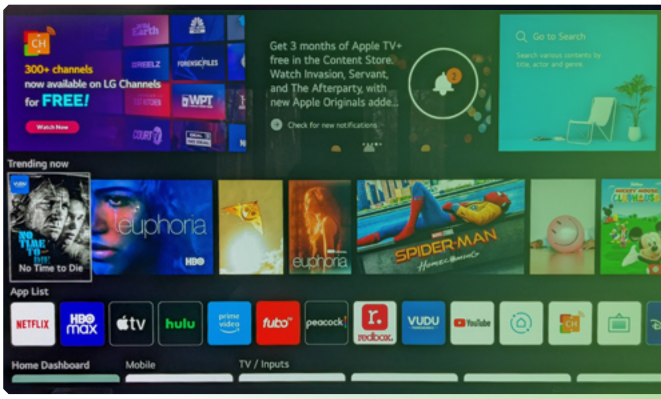
Currently, most internet services provided by cable TV companies are delivered through a hybrid fiber-coax network. Fiber optic lines are used to connect data centers to neighborhood "nodes," sealed boxes hanging on utility poles, with copper coaxial cable finishing the journey to individual homes and businesses.

"However, fiber directly to the home is becoming much more popular as we all need the increased bandwidth to do more advanced things," notes Ken Capozzi, Global Director of Engineering at Amphenol Fiber Optic Products. "We're now seeing all the fiber get closer and closer to the home, and in some places all the way to the home. Very soon I think we are going to be talking about fiber to the desk, where the fiber goes all the way to the Wi-Fi router, or to your TV, computer or gaming system."

Amphenol Fiber Optic Products is a division of Amphenol, one of the world's largest providers of advanced interconnect systems, sensors and antennas. The fiber optics division focuses on four major markets:

- Data Centers
- IT/Datacom Networks
- Medical Devices
- Mobile Networks

"Heart probes are a very interesting application for fiber optics because it allows the surgeons to see directly into the heart with a very non-invasive procedure," Capozzi says. "In fact, my father recently had a valve done. And he has almost no marks on his body because they were able to go in first through the wrists to check things out. And then to do the actual surgery, they went in through the hips. It's really, really amazing."



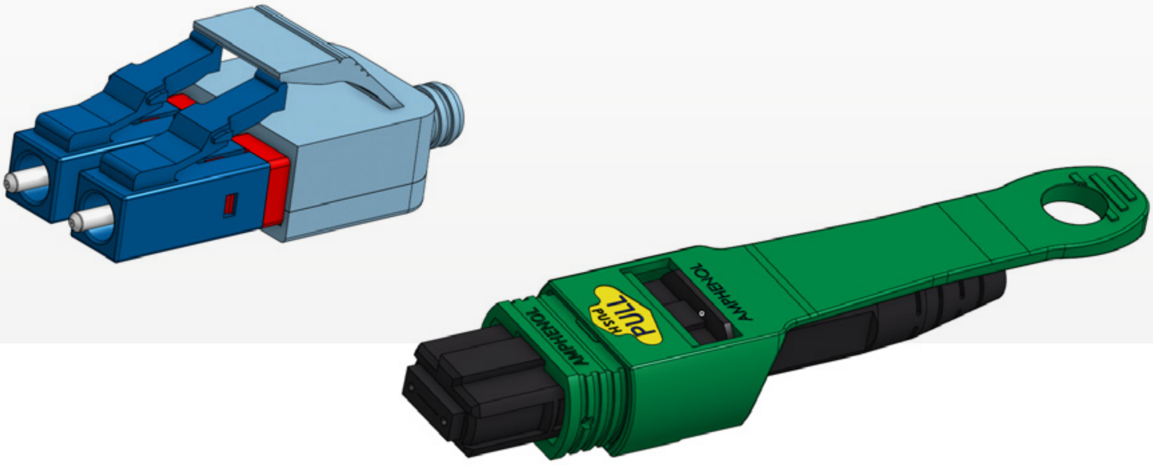
300+ channels now available on LG Channels for FREE!

Get 3 months of Apple TV+ free in the Content Store. Watch Invasion, Servant, and The Afterparty, with new Apple Originals adde...

Amphenol provides the infrastructure that makes the video streaming boom possible, meeting the ever-increasing demands of media providers and consumers.

"Amphenol as a whole is incredibly diversified, and that's what gives us our strength as the economy ebbs and flows," he adds. "Our unit is pretty agile as we're able to quickly turn around concepts and prototypes to our customers to help us win opportunities."

CAD Collaboration Between Teams in U.S., Mexico, China and Vietnam



To improve communication between its globally distributed engineering and manufacturing teams, Amphenol Fiber Optic Products chose Onshape, the only cloud-native product development platform that combines CAD, data management and both synchronous and asynchronous collaboration tools. Pictured above are Amphenol connectors used in data center applications.

To rapidly customize their fiber optic splitting boxes for a major telecommunications client, Amphenonal relies on cloud-native Onshape, the only SaaS product development platform that combines a robust CAD system with built-in data management and real-time collaboration tools.

"Today's typical splitting boxes are completely sealed on the inside. And once you decide where point A and Point B are connecting, that's dependent on how the system is set up and is not changeable," Capozzi explains. "So our customer thought it would be really great if they could open these boxes and reconfigure some of the lines so that they can be more flexible when they're out in the field and doing these installations."

When developing new products, Amphenol Fiber Optic Products has its "quarterback engineers" in the United States collaborate on designs with its R&D teams and manufacturing engineers in Mexico, China and Vietnam. Whenever one Onshape user anywhere in the world makes a design change, everyone else on the team can instantly see it. A comprehensive Edit History tracks who made which changes and when, enabling the team to quickly revert back to any prior stage if desired.

This built-in data management system eliminates the delays of teams sending information back and forth by email or through Dropbox and prevents version control problems.

"Onshape helps us develop highly refined production-ready designs in a very short period of time that are easily reviewed by the team that will be making the product. Our engineers around the world can now see and work on the latest CAD model at the same time," Capozzi says.

"With our previous CAD system, we really were working in silos at each facility," he adds.

"Trying to open big assemblies and drawings that are saved onto a file share globally just doesn't work very well. And then you can't roll things back if you don't like the changes that were made. It was easy to lose a lot of your work because something wasn't saved correctly or somebody saved over the file. Because of all those difficulties, there was very little collaboration happening from the R&D teams."

Cost Benefits of Onshape's Built-In PDM and Reduced IT Overhead

Prior to heading the engineering team at Amphenol Fiber Optic Products, Capozzi devoted more than a decade managing the CAD and PDM systems for Amphenol's Radio Frequency division. In 2020, he came on board to overhaul the fiber optic team's approach to data management.

For designing and updating its hundreds of different connectors and cables for communications equipment, the Amphenol engineering team was seeking a more efficient Product Data Management system.

Amphenol
FIBER OPTIC PRODUCTS

When evaluating the [total cost of PDM]() systems, Capozzi recalls being surprised that Onshape offered both CAD and PDM for roughly the same cost he was already paying for just CAD with other vendors. He says switching to the cloud-native product development platform saved Amphenol $80,000 to $120,000 up front, without even factoring in annual maintenance fees and ongoing IT costs.

"I didn't want to spend six figures to get a PDM system," Capozzi says. "Onshape does everything we need it to do."

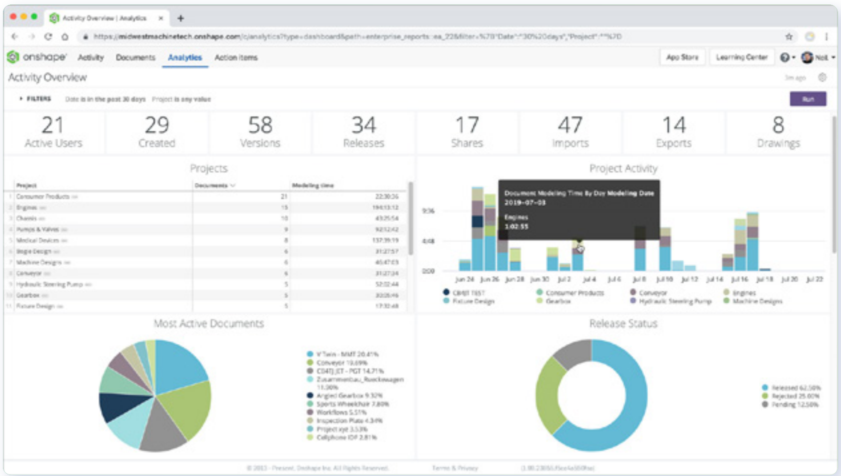
As a Software-as-a-Service (SaaS) platform, Onshape also has a zero IT footprint, eliminating the need for installs, upgrades, licenses, servers, networking equipment and the time required to manage them.

"I'm not an IT guy. I'm a mechanical engineer," says Capozzi. "And I used to spend a large portion of my time doing IT-related tasks and engaging with IT and buying terabytes of overhead so that we could do updates. So there are so many facets to conventional PDM systems that all just get smoothed out with Onshape. Instead of thinking about IT, I can now focus more on R&D and manufacturing."

Analytics Offer Live 24/7 Design Updates Across the Enterprise

Overseeing multiple engineering teams across multiple countries, Capozzi says he especially values the [real-time business analytics](#) available in the [Onshape Enterprise plan](#).

The Enterprise plan's Activity Overview dashboard provides a high-level snapshot of a company's product development, tracking the total number of hours spent on each design project per day per contributor, which engineers are working on which projects, and how many release candidates are pending approval.


Activity Overview | Analytics
https://midwestmachinetech.onshape.com/c/analytics?type=dashboard&path=enterprise_reports::ea_22&filter=%7B"Date":"30%20days","Project":""%7D
onshape
Activity
Documents
Analytics
Action items
App Store
Learning Center
Neil
Activity Overview
FILTERS
Date is in the past 30 days
Project is any value
Run
21 Active Users
29 Created
58 Versions
34 Releases
17 Shares
47 Imports
14 Exports
8 Drawings
Projects
Project Activity
Document Modeling Time By Day Modeling Date
2019-07-03
Engines
1:02:55
9:36
4:48
0:00
Jun 24
Jun 26
Jun 28
Jun 30
Jul 2
Jul 4
Jul 6
Jul 8
Jul 10
Jul 12
Jul 14
Jul 16
Jul 18
Jul 20
Jul 22
CB4FJ TEST
Fixture Design
Consumer Products
Gearbox
Conveyor
Hydraulic Steering Pump
Engines
Machine Designs
Most Active Documents
V Twin - MMT 20.41%
Conveyor 19.69%
CD4TJ JET - PGT 14.71%
Zusammenbau_Rueckswagen 11.30%
Angled Gearbox 9.32%
Sports Wheelchair 7.80%
Workflows 5.51%
Inspection Plate 4.34%
Project xyz 3.53%
Cellphone IDF 2.81%
Release Status
Released 62.50%
Rejected 25.00%
Pending 12.50%
© 2013 - Present, Onshape Inc. All Rights Reserved.
Terms & Privacy

	Project	Documents	Modeling time
1	Consumer Products	21	22:30:26
2	Engines	15	194:13:12
3	Chassis	10	43:25:54
4	Pumps & Valves	9	92:12:42
5	Medical Devices	8	137:39:19
6	Bogie Design	6	31:27:57
7	Machine Designs	6	45:47:03
8	Conveyor	6	31:27:24
9	Hydraulic Steering Pump	5	52:02:44
10	Gearbox	5	30:28:46
11	Fixture Design	5	17:32:48

The Onshape Enterprise Activity Overview dashboard gives managers a company-wide view of design progress across multiple engineering teams.

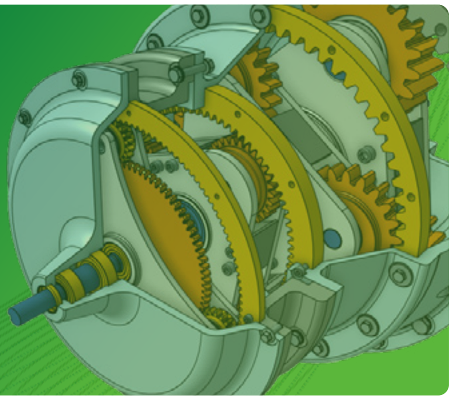
The analytics dashboard allows executives and managers to identify potential design and manufacturing bottlenecks earlier, and enables them to reallocate company resources in a more timely manner.

"One of the great things about Onshape is that you can see the activity of every single user, what they opened, what they changed. While some of my teams are sleeping, others are working. So I can wake up in the morning and immediately see what our teams in China and Vietnam were able to accomplish overnight," Capozzi says.

"Likewise, I don't always work out of our Illinois headquarters. Sometimes I work remotely from my home in Connecticut. Sometimes I'm at our Mexico facility," he adds. "So Onshape helps me keep an eye on what everyone's working on regardless of where I am. Onshape just makes it easier for me to do my job. I'm much more plugged in now than I was before."

Sign up for a Free Onshape Professional Trial

and experience the benefits of cloud-native product design today!

Get Started →