thingworx® navigate™

REAL-TIME DATA ACCESS:

Taking the digital thread from concept to reality

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Introduction

One of the fundamental goals of digital transformation and the digital thread is better collaboration across the extended enterprise. This enables faster innovation, improved quality, and lower costs. For discrete manufacturers, the foundation of that transformation starts with managing and sharing product data that originates in engineering.

How does your engineering department hand off product related information – drawings, designs, documents, spec sheets --- from engineering to other departments that need that information? How are you involving stakeholders across the business in critical PLM processes? How fast does engineering learn about problems in downstream processes and operations?

In this eBook, you will learn how to equip stakeholders along the digital thread with relevant design and engineering data leveraging ThingWorx Navigate.

- Decisions will be more informed and made more quickly
- Productivity will increase as data is more easily found and communicated
- Customer satisfaction will improve because product information will be more accurate

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Communicating Product Data Today

Let's start by walking through a common communication challenge. If, for example, an engineer makes an update in their PLM system today, what is the likelihood that others are going to see that update right after the change is accepted? Would you say it's more realistic that this change is acknowledged two or more weeks later? And at that point, are stakeholders working off the correct version of the data or the original version that doesn't reflect the latest changes?

Unfortunately, gaps and delays in the communication of product data are both systemic because of automation challenges and functional silos. There is often a sense of ownership over data or lack of trust in the teams to which the data is shared. For instance, one typical and growing concern relates to the sharing of data externally, "if I share this data with our suppliers or contract manufacturers, will they steal my IP?". These barriers to collaboration are not only creating delays in product development, but also lead to costly rework, issues in production that impact quality, slow response times from design and manufacturing partners, and multiple service visits to a customer. The problems of working in siloes are made worse when the company grows by acquisition which causes double, triple, or quadruple the work to align teams and their inherited tools.

Further complicating the matter, IT also realizes that users need to work from different source systems, but how do they integrate and make available the relevant product related data? They would need to train people in all these different systems and create additional scripts, macros, and so on. This all requires a significant amount of work – when IT rarely has enough resources as it is. Requirements for security can also be a roadblock. The highly interactive nature of cross-functional, geographically distributed project teams often causes breakdowns when it comes to sharing data and project plans outside the firewall. Setting up and maintaining extranets is expensive and risky.

And then there is the global pandemic. How do you accommodate remote work?

Bottom line, it is very hard to manage and find information and make decisions with confidence without a proper collaboration platform. Design engineers are bogged down with requests for product data. Each situation that requires them to pull and share data with non-frequent users is time spent away from designing and innovating. IT is regularly over-committed to projects. With pressure mounting for teams to increase efficiency and reduce costs while getting products to market faster, there must be a better way.

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> *Before ThingWorx Navigate, 20% or more of an engineer's time was spent locating information (trying to find files, support the plant through different certificates, getting 3D models regenerated, etc.)."*
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> **Erica Goosen**
> *Senior Product Engineer, Steelcase*
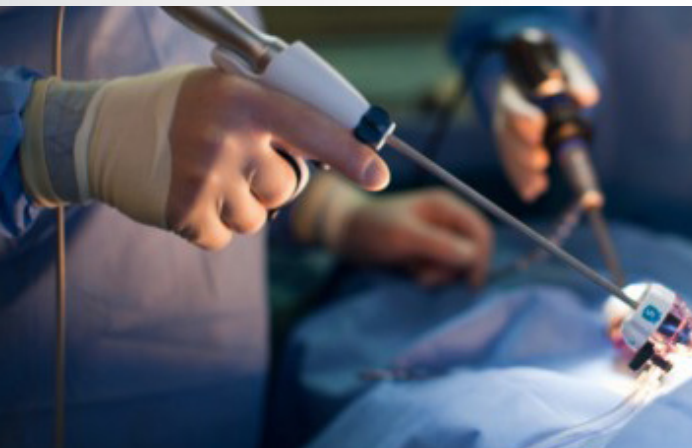
Collaboration Between all Stakeholders

ThingWorx Navigate empowers your business users to make quality decisions and save time with a state-of-the-art user experience aligned with today's expectation for apps. Everyone in the organization can see, access, and contribute to PLM processes using a single authoritative source of product data along the entire product lifecycle so that all work is value adding.

> " *Navigate is simple, the best user experience that we can give our enterprise users along with the fastest enterprise integration – so much value to our users.*
>
> **Preeti Gupta**
> *Lead ThingWorx Architect,*
> *Johnson & Johnson*

Windchill, PTC's enterprise PLM platform for enabling the digital thread, has an access model (technology governance, architecture, and cybersecurity) that ensures your IP is protected. Operators, service technicians, quality inspectors, and more are provided secure access to PLM content through simplified role and task-based apps, helping them meet schedule, cost, and quality goals. The highly tailorable apps also enable real-time data sharing with customers, suppliers, regulators, and joint venture partners. Whether searching for approved and released drawings or reviewing and approving a change, the experience is seamless, fast, and secure. While these apps are focused on PLM content and processes, they can also be easily connected with third-party enterprise systems, for example ERP, to display cost or inventory information within the part structure of a product.

> " *Not only has ThingWorx Navigate made the transition from legacy systems to Windchill smoother, it has also demonstrated the value of extending product information to more stakeholders than we have previously.*
>
> **Martin Mundinus**
> *PLM Program Manager,*
> *MAN Truck & Bus*

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Democratization of Data and Speed of Adoption

ThingWorx Navigate is designed to enable collaboration across the digital thread, delivering only what is needed for that particular task or role. The out of the box applications are organized in three main categories based on the ready to use functionality they provide.
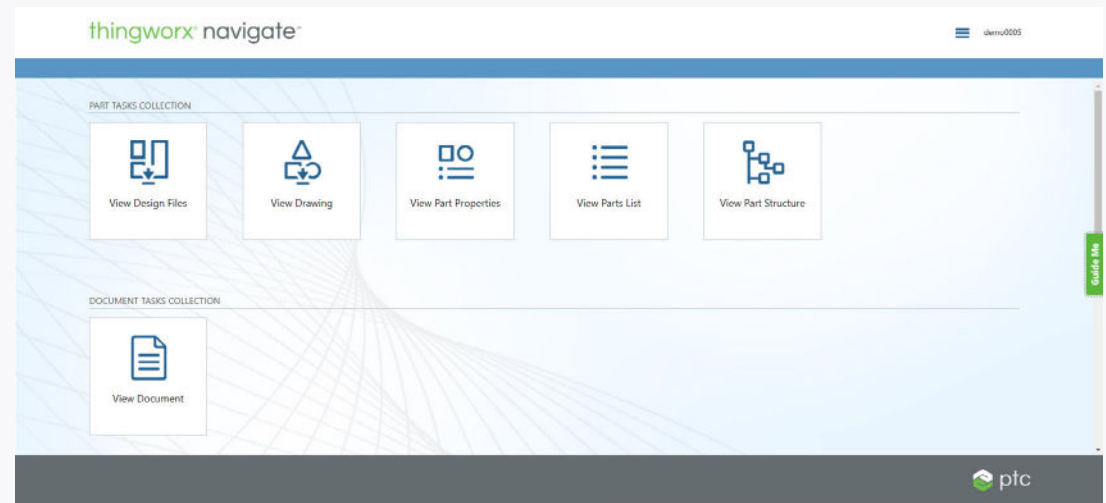
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> *Downstream departments access product data using ThingWorx Navigate. They find it very easy to use. They can easily see recent product changes, and they can optimize the aftermarket service operation."*
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> **Pascal Martinez**
> *Global Director of Strategy and Solutions Portfolio, Volvo Construction Equipment*
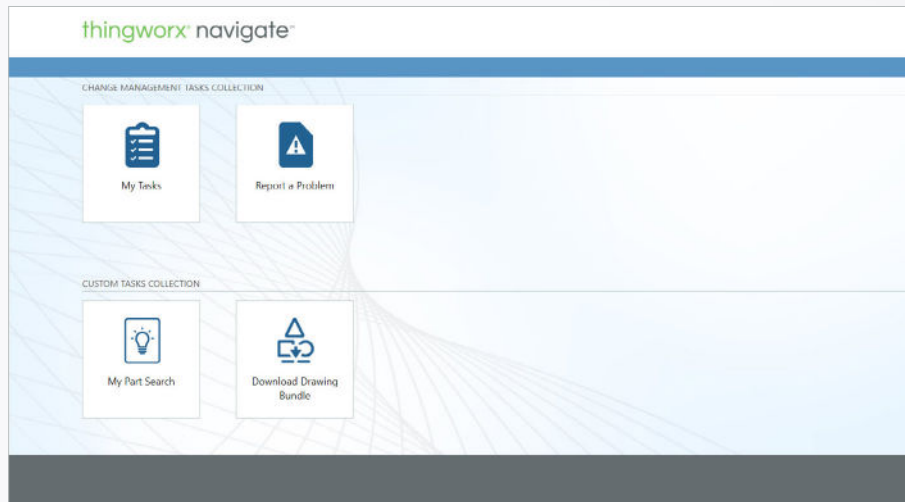
Apps for viewing PLM information

The View apps make it easy to find, view, access, and download PLM content by leveraging a 3D viewer that facilitates interacting with 3D models. drawings, design files, part information, and documents are made available for faster decision making and reduced errors. The View apps can be accessed through a desktop, tablet, or via a shop-floor terminal.
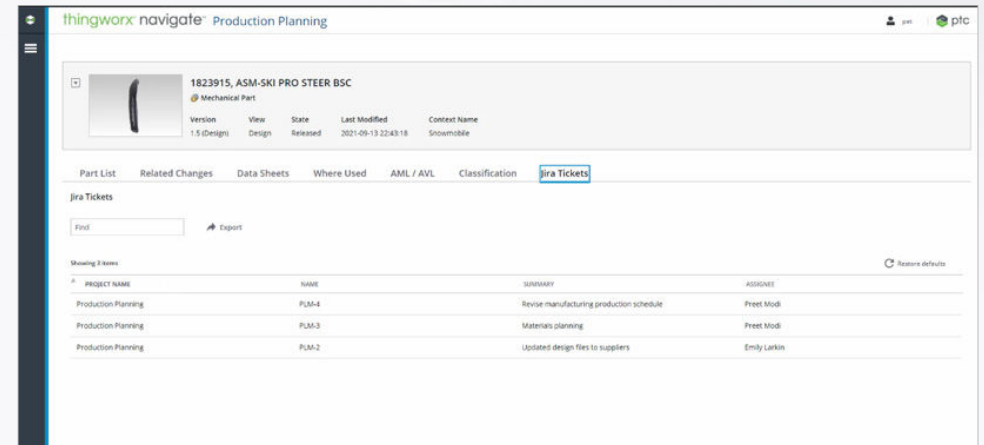
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Apps for active PLM process participation

The Contribute apps turn every user into an active PLM contributor. Easy-to-use apps, designed for everyone, drive more change process participation, for example, and fewer in-person meetings. With problem reporting any user can report an issue regardless of its origin (remote customer site, supplier, or the shop floor). Having more users able to identify problems and report them drives product and process quality improvements.

Apps to connect to third party systems

Connected PLM leverages the ThingWorx platform for custom app building. While ThingWorx Navigate comes with a rich set of role and task optimized apps, business users need the ability to leverage the experience of these apps (model the architecture behind them) to build new ones. For rapid development of custom apps that have the same look & feel as the standard apps, a low code environment with re-usable UI components is provided. ThingWorx also supports out of the box connectors to third party systems (ERP for example) as well as a framework for accessing legacy systems. Digital twin apps can become a reality because of the built-in ability to combine design and engineering data with real-time data coming from the physical world via the Internet of Things (IoT). With security enforced by Windchill, users can search multiple systems from the cloud or on-premises, gather all associated docs, and integrate 2D and 3D.

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We don't need to hunt for something. And we are always sure that this is the correct data. If somebody is doing something now in the system, a millisecond later, I can see it in my app.

Wolfgang Ruedell
Engineering Manager,
Electronics Business, ZF

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Go SaaS

ThingWorx Navigate can be deployed on-premises or in the cloud. SaaS (Software as a Service), however, provides the best value, lowest risk, and fastest time to market. With SaaS you can share consistent data and insights across disciplines, divisions, and external partners with pre-configured secure instances ready to jump start collaboration needs. PTC's economies of scale that support a world-wide customer base reduce total cost of ownership, program risk (Windchill experts are managing/optimizing your system and protecting your data), and support risk (software, hosting, managed services are wrapped together).

Learn more about PTC's **ThingWorx Navigate** today.

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