Siemens' and Autodesk's New Deal: CAD as a Strategic Resource Rather Than a Commodity

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One of the main points of Siemens' PLM solutions is that they always stood for the industry's greatest transparency regarding openness towards other software.

The company's PLM suite, Teamcenter (TC), is a good expression of this. An interesting fact is that no other software handles more files from CATIA, the CAD software of Siemens' tough competitor Dassault Systèmes, than TC does.

But good can always be better, and last week Siemens PLM signed an agreement on interoperability with one of the other PLM industry giants, Autodesk.

The idea is to help manufacturers reduce costs arising from incompatibility between applications during product development and avoid possible problems with data integrity.

There's no doubt this is the news of the week in the PLM and CAD world, but it's not only the "end of a cold war." The news also signals an important change in the view of CAD software.

"CAD is about to be seen as a strategic resource, rather than a commodity," claims Mats Friberg, Siemens PLM's VP and managing director of Nordic operations. One of the reasons for this is hidden in the Industry 4.0 initiative.

The Industry 4.0 initiative changes the PLM industry, claims Siemens PLM's managing director of Nordic operations, Mats Friberg. "Not least, it affects CAD and the view of it's value. It will become more of a strategic resource when solutions like Industry 4.0, charactarized by seamless flows of all product data involved in product realization, slowly but surely is becoming a reality."

With this agreement, Autodesk and Siemens promise to undertake a series of measures to improve cooperation between their respective software. In the case of Siemens PLM, this mainly concerns the NX and Solid Edge solutions. In the case of Autodesk, we're talking about Inventor, AutoCAD and Fusion as well as several other products that will get sharper connections to Siemens' products.

The Industry 4.0 Concept Demands Seamless Flows

Siemens' Mats Friberg said that this cooperation indicates a change when it comes to the role of CAD and how it is typically regarded:

“CAD software has for many years been seen as a kind of staple good, a commodity, where more or less every solution had the same or similar functionality. Thus, it has not really made any difference which product you bet on. But in the light of new disruptive technology platforms and coherent concepts like Industry 4.0, all of that is changing,” Friberg asserted, making the point that the marriage between product development and production, which is the hallmark of the Industry 4.0 concept, reveals an underlying need for automized and seamless flows of data related to product realization between all stakeholders in the process.

As product development, manufacturing, distribution and even operation of the product by the end customer, with feedback of data to the product development organization becoming a reality, the loop is closed.

A consequence of this is that barriers in the form of incompatibility of software, for example, become obstacles to the free flow of product-related data.

“The bottom line is that CAD must be scaled up, and once again be considered a strategic resource,” Friberg asserted, adding that, “The choice is often between software characterized by openness versus those who are trying to lock in their customers to formats that are either incompatible or whose translation to other formats creates inertia in the flows.”

PLM and integrated CAx (CAD) tools are important components in the Industry 4.0 concept. However, from an overall perspective it involves three key parts. The first is the Internet of Things and cyber-physical systems. Secondly, it involves advancements in big data and powerful analytics and thirdly, the communications infrastructure.

Today's agreement between two of the leading leading CAD companies therefore sends a signal that seamless multi-CAD flows in all processes related to coherent product realization processes is an area of

priority, and will offer great benefits to the user collectives.

The common goal, said Friberg, is "to streamline data sharing and reduce costs for organizations with multi-CAD environments.”

Strong Pressure on the Manufacturing Industry to Streamline

So, why is the cooperation between Siemens and Autodesk so important?

“Interoperability between different CAD systems has been an ongoing issue that negatively affects the manufacturing industry worldwide, and can increase the cost of products ranging from cars and planes to smartphones and golf clubs,” commented Stefan Jockusch, VP of strategy for Siemens PLM Software.

He claims that Siemens has been at the forefront in regards to solving compatibility issues by offering a wide range of open software that improves interoperability considerably.

“And this partnership is another positive and important step in our efforts to promote openness and interoperability, as well as to reduce costs for the global manufacturing industry by facilitating collaboration throughout their value chains,” Jockusch concluded.

“Improved interoperability between CAD systems can lower the cost of products ranging from cars to smartphones and golf clubs,” according to Stefan Jockusch, VP of strategy for Siemens PLM Software.

Today's manufacturing industries are under increasing pressure to quickly offer the market high quality products, with increased efficiency and lower costs for consumers.

The reality is that almost every IT landscape in the world is charactarized by software diversity. Many manufacturing companies operate in environments consisting of multiple different solutions from different CAD software vendors. These multi-CAD environments can exist internally between departments, or externally with partners and supply chains.

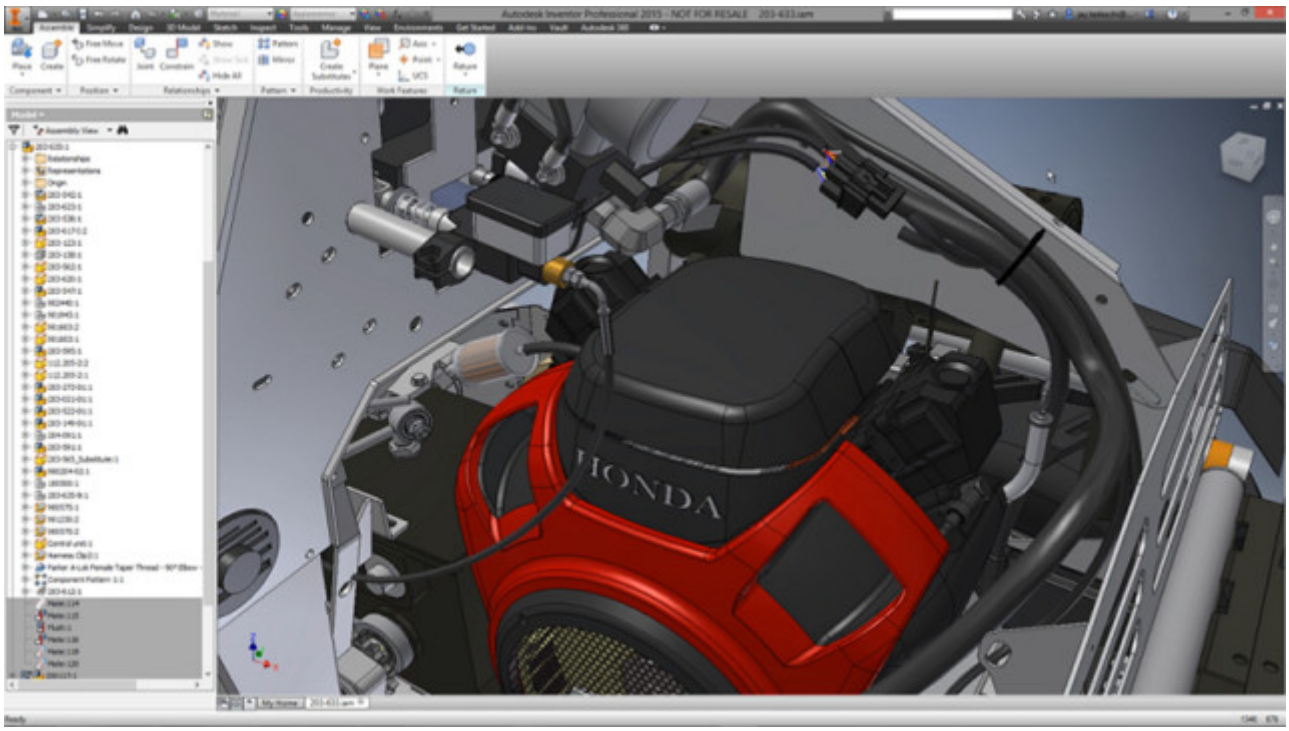
This means that interoperability between CAD software has become a major issue for users of design software

and a major challenge for manufacturers.

An interesting fact in this context is that Autodesk has a strong representation with their CAD producs everywhere; not only in small and medium sized companies but also in large trans-national enterprises.

For instance, a global manufacturing player such as Sandvik, a Swedish manufacterer of tools and tooling systems for metal cutting, has thousands of Autodesk seats in parallel with the “official” standardization on Siemens NX CAD solution.

This is how the software landscape looks for many companies, which reveals some of the business logic behind what Siemens and Autodesk decided to do in terms of interoperability. Both companies have a vested interest in keeping customers in a good mood, and smoother compatibility processes will certainly contribute.



Autodesk’s 3D software Inventor as an example of an interface.

In light of this, it’s no surprise that the interoperability agreement is aimed at reducing the overall effort and costs typically associated with this type of software.

In particular, the new offering from Siemens and Autodesk will improve many situations where there currently exists a combination of both companies’ software. Under the terms of the agreement, both companies will share and exchange toolkit technology in end-user applications to build and market interoperable products.

"We have been working hard to create a more open environment in our platforms," said Lisa Campbell, VP of production strategy at Autodesk, adding that this CAD giant is well aware of the software mix their customers use and that AD is prepared to act accordingly.

Lisa Campbell, VP of production strategy and marketing at Autodesk, said, "Interoperability is a major challenge for customers throughout the manufacturing industry, and Autodesk has been working hard to create a more open environment through our technology platforms. We understand that our customers use a mix of products in their work, and our highest priority is to give them the flexibility they need to do their jobs."

Finally, it's clear that although "neutral" formats like STEP and IGES are common today, they can be facing a tougher future if interoperability alliances like Siemens and Autodesk are crowned with success.

A key question is what will happen with Dassault Systèmes' CATIA product in this respect. The French PLM developer is known to go their own way, and are generally very skeptical about this kind of collaboration.

Even if collaboration is in the best interest of the customer, CEO Bernard Charles prefers to be the sole master of the PLM related suppliership, whether it is about CAD or PLM platforms in general. This is the case when it comes to CATIA V6, at least, which is hard to streamline in environments other than the 3DEXPERIENCE platform with ENOVIA V6, which is a non-file based, data-driven product data backbone.

The situation is a little different regarding Dassault Systèmes' mainstream CAD solution, SOLIDWORKS, since DS is licensing the Parasolid kernal from Siemens PLM.

Dassault Systèmes' CEO and president, Bernard Charles. Will we see cooperation in terms of interoperability between DS and the other players on the market? Many observers doubt this; however, DS signed The Code of PLM Openness. (Image courtesy of Boston Business Journal.)

The Code of PLM Openness

Finally, a couple of words on an existing "treaty" in the context of making communication between different software easier.

It is called "The Code of PLM Openness" (CPO) and combines requirements from business with technological ones. The CPO is an initiative of the ProSTEP iVIP Association in order to establish a uniform understanding of "openness" in the context of PLM among IT customers, IT vendors and IT service providers.

This code primarily relates to the automotive industry, but it also extends across other industry segments such as aerospace. According to ProSTEP iVIP, the CPO goes beyond the demand to provide IT standards and appropriate IT interfaces. It comprises measurable criteria (mandatory, desired and optional) for the categories interoperability, infrastructures, extensibility, interfaces, standards, architectures and partner relationships.

These are the current members of CPO's core team:

- Airbus
- Atos
- Autodesk
- BMW
- CONTACT

- Dassault Systèmes
- PTC
- Siemens PLM
- Toyota
- T-Systems
- Volkswagen
- xPLM