The Fusion Portfolio—Autodesk's Product Innovation Platform

CIMdata Commentary

Key takeaways:

- *Over the last year, Autodesk invested heavily in building out their Product Innovation Platform, extending the Fusion brand to current and new offerings*
- *Autodesk announced Cloud PDM for MCAD data management, available now for current Fusion Lifecycle subscribers at no additional cost*
- *Their recent acquisitions, Configure One (now Fusion Configure) and SeeControl (now Fusion Connect), are being rapidly integrated into existing and new workflows to support the development of highly configured and increasingly smart, connected products*

Autodesk held their third annual Accelerate event in Boston's Seaport District on 15-16 September 2016. Nearly 300 people attended, including many PLM 360, or Fusion Lifecycle, customers, as Autodesk has branded it since the last event.[1]

At last year's Accelerate, Autodesk positioned Fusion 360, their cloud-based MCAD solution, at the center of their product innovation platform (PIP), a rethinking of the product development environment that CIMdata (and others) have promoted for the last few years. The Autodesk speakers at this year's Accelerate highlighted Autodesk's moves to flesh out and achieve this vision with their customers. The customer speakers illustrated how they are using Autodesk's existing and new solutions to great advantage. (Use hashtag #XLR8Fusion on www.Twitter.com to learn more about the event.)

Ms. Lisa Campbell, VP of Manufacturing at Autodesk, kicked off the event reiterating the three disruptive trends highlighted in 2015: the means of production is changing, the products themselves are changing, and the nature of the demand for those products is also changing. Ms. Campbell used these points to frame the moves that Autodesk made to add to their PIP vision,[2] as elaborated in Figure 1. Just before Accelerate 2015, Autodesk announced they were acquiring SeeControl,[3] a cloud Internet of Things (IoT) service platform. Products in a wide range of industries are becoming smart and connected using IoT technology and services. Initially christened "Autodesk SeeControl," the solution is now named "Fusion Connect," and is Autodesk's answer for developing and supporting these new age products across their lifecycle.

While by one count there are hundreds of IoT platforms in the market, many of these small companies lack the resources to develop solutions to analyze and leverage the data their platforms help to collect. At Accelerate 2016, Autodesk also announced a partnership with Nutonian, an MIT startup, to address this need and to offer a new "dynamic predictive analytics" capability.[4] Autodesk plans to use Eureqa, Nutonian's artificial intelligence (AI) technology, to help extract patterns from these huge data sets to suggest possible solutions to problems highlighted by the data. This will be an add-on to Fusion Connect priced between

[1] http://inthefold.autodesk.com/in_the_fold/2016/05/autodesk-adds-fusion-connect-and-fusion-lifecycle-to-its-cloud-connected-product-innovation-platform.html
[2] http://blogs.autodesk.com/inthefold/autodesk-adds-cloud-based-product-data-management-to-fusion-lifecycle/
[3] http://news.autodesk.com/press-release/corporate-sustainability/autodesk-signs-agreement-acquire-seecontrol
[4] http://autodeskfusionconnect.com/fusion-connect-embeds-nutonians-a-i-software/

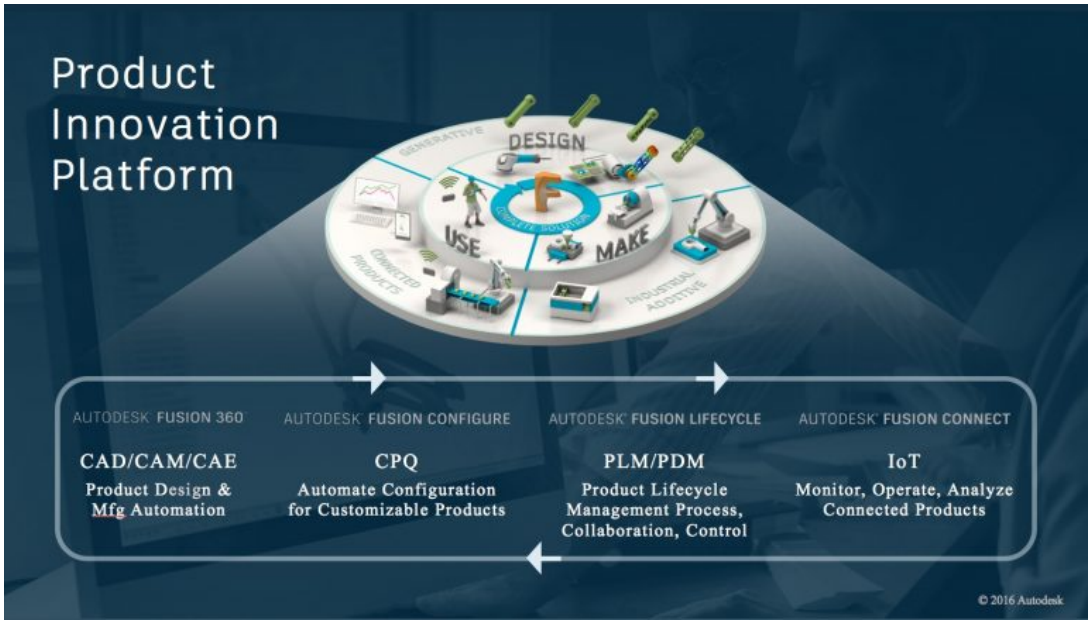

Figure 1—Autodesk's Product Innovation Platform

US$6,000 and US$12,000. CIMdata looks forward to learning more about this technology and its application.

Mr. David Keeley, Engineering Manager at TSM Control Systems, talked about their company's IoT journey over the last year. TSM Control Systems is a specialist in gravimetric blending and control systems. Mr. Keeley initially struggled to get traction for applying IoT technology at his company and spent a year to instrument all of their machines. But once some key people tuned into the IoT opportunity, his struggle became how best to manage the cascade of ideas for new IoT applications that could swamp their whole effort. Scope creep is common to other PLM-enabling applications, so it makes sense here. TSM looks forward to deploying the Nutonian-based analytics capabilities to help their customers achieve their often lofty IoT-enabled goals, in the end becoming more of a partner to their customers than a supplier.

As to the changing nature of demand, people now want mass customization—their product, their way. The value chain can increasingly be profitable with lot sizes of one IF existing design elements can be rapidly configured to meet a range of customer desires. Configure-Price-Quote (CPQ) solutions help companies in build-to-order, configure-to-order (CTO), and engineer-to-order (ETO) businesses to ensure profitability up front in the quoting process.

In October 2015, Autodesk acquired Configure One,[5] an independent provider of enterprise-level CPQ solutions. Now rebranded Lifecycle Configure, this new offering is targeted to Autodesk's many customers who deliver highly configured products. Ms. Campbell described the platform as "connect, complete & instant-on" to support design, manufacturing, and use across the product lifecycle. These new additions make perfect sense to support the changing needs of product companies to develop and manage configurable, smart products. One of those companies, GSI, a global manufacturer of grain bins, was using valuable engineering resources to develop quotes. They looked to Configure One to help them automate their quoting process.

[5] http://inthefold.autodesk.com/in_the_fold/2015/10/autodesk-expands-into-configure-price-quote-with-acquisition-of-configure-one.html

GSI wanted quotes in a day, done by sales using a Web-based tool with minimal engineering support. They also wanted the new quoting tool to be built for use by sales with minimal IT help. Using the new Configure One tool, GSI was able to offload over 80% of quotes from engineering (the other 20% were too custom). The quotes were more accurate, with fewer Bill of Material (BOM) errors, and the system automatically pulls all of the information for the bid package after the user hits the "configure" button. Brad Lott, the E-Business Leader at GSI Group, called their CPQ tool "an exceptional gift" to their business. No wonder, since including a single add-on item in their configurator yielded a 311% increase in sales of that item!

The one capability missing from Autodesk's cloud PIP vision was cloud-based management of mechanical computer-aided design (MCAD) data to support engineering work-in-process. Fusion 360 was designed for the cloud and cloud-based data management, but many value chains rely on other MCAD solutions.

Historically, Autodesk provided their on-premise Vault offering for managing MCAD data. At recent Autodesk events, the company spoke about the technologies they were developing to minimize data transfer requirements, a big issue to many considering cloud deployments. The industry expected a cloud product data management (PDM) announcement would come, but when? Mr. Brian Roepke, Senior Director of PLM and IoT at Autodesk, took the stage late on September 15 to make just that announcement, stating that Autodesk's new Cloud PDM offering was available immediately. As described by Mr. Roepke, Cloud PDM will initially support Autodesk's Fusion 360 and Inventor solutions, as well as Microsoft Office and Dassault Systèmes SOLIDWORKS. (In reality this capability can support any file-based authoring tool.) More MCAD integrations are planned, with NX and Solid Edge from Siemens PLM Software both under consideration. The Cloud PDM offering includes cloud-based visualization and mark-up and advanced collaboration and sharing features, dubbed Live Review. Their "transfer avoidance" technology only moves small increments of data to the cloud during design evolution, not whole files or assemblies, which Autodesk claims can reduce the bandwidth needed by 30-70%. Their Connected Desktop function lets users drag and drop a folder of parts into Cloud PDM and it understands the assembly relationships. All of these Cloud PDM capabilities are available immediately to all Fusion Lifecycle subscribers at no extra charge—which elicited cheers from the crowd during the announcement.

Of course, this is only the beginning of Autodesk's PIP journey. Their road map session highlighted ideas and initial work on IoT widgets for use in their other offerings, support for electronic design, support for software development tools, topology optimization, and other topics. This commentary only scratches the surface of the content presented at the event. Autodesk has made significant progress and their customers attest to the value, ease of adoption, and ease of use of their platform elements. More than for most PLM solutions, democratization of advanced capabilities is essential for Autodesk and their customers, most of whom are small and medium-sized businesses that have the same product development issues as large firms, but often without the surfeit of highly educated technical talent and large IT budgets that those large firms enjoy. Autodesk's customers' success to date suggests they are on the right path, and CIMdata looks forward to the continued evolution of their product innovation platform vision and implementation.

About CIMdata

CIMdata, an independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design and deliver innovative products and services

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