

Accelerating Toward the Future of Making Things

CIMdata Commentary

Key takeaways:

- *Customers leverage Autodesk Fusion Lifecycle solutions to power a wide range of business processes in many different industries.*
- *Companies like the ability to rapidly tailor the solution mostly without deep technical skills, helping to quickly address pressing business problems, speeding its adoption within organizations.*
- *The company has a longer road ahead to flesh out their product innovation platform to support engineering work-in-process management and other essential PLM use cases on the cloud.*

Autodesk convened their fourth Accelerate conference on September 21-22, 2017 at the Seaport World Trade Center in Boston, MA. The crowd of about 200 included a range of Autodesk customers, Autodesk staff, sponsors, Autodesk partners, media, and analysts. As a company, Autodesk is in the middle of some big changes: their move to subscription from perpetual license and a new CEO, Andrew Anagnost. Based on their financial reporting, the business model change to subscription is progressing mostly as planned, and Mr. Anagnost attended Accelerate without fanfare (or a speaking slot) to meet with some Autodesk customers.

The formal kickoff of the event fell to Mr. Stephen Hooper, Senior Director, Design & Manufacturing. Mr. Hooper echoed Autodesk's message of the last few years about "The Future of Making Things," where changes in production, connection, and the nature of work are both forcing companies to adapt while offering new opportunities not available with their existing processes and tools. Autodesk is trying to support this transition with their Fusion portfolio, which is at the core of their product innovation platform, a nomenclature developed by CIMdata, Gartner, and IDC that was adopted by Autodesk and used at previous Accelerate events.¹ Mr. Hooper highlighted Autodesk's work with Airbus, covered at previous Autodesk events, but also spoke and played a video about Ramlab, a company offering "metal parts on demand." The video showed how they were combining robotics and additive manufacturing (AM), with material deposition positioned using a robot end effector. This method is very flexible and has been used to great benefit in AM and composites to date. In closing, Mr. Hooper introduced Thursday's keynote speaker, Mr. Niel Barker, Engineering Process Manager at Advanced Oncotherapy PLC, a startup leveraging technology and expertise from CERN, the European Organization for Nuclear Research, well-known for leading edge physics research.

At CERN, big science takes big machines and Advanced Oncotherapy used that knowledge to design and build the first linear proton accelerator for medical applications. Most radiation treatments cause significant collateral damage to healthy cells when targeting cancerous ones. With Advanced Oncotherapy's proton accelerator, protons can be more focused on tumors, to the great benefit of the patient. Normally the size of football fields, the company is looking to install several of their new devices in a subbasement of a building in a tony London neighborhood. Why is this important? Existing proton technology for medical applications can be used, but centers for treatment cost hundreds of millions of dollars and must pass long

¹ CIMdata's commentary on Accelerate in 2016 focused on "The Fusion Portfolio—Autodesk's Product Innovation Platform," <https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/6907-the-fusion-portfolio-autodesk-s-product-innovation-platform-commentary>.

and expensive commissioning processes. Even then, when their useful life is over, you have to deal with a machine that has been generating radioactivity for 25 years and is comprised of radioactive materials. Advanced Oncotherapy's mission is to reduce the size from a football field to something like an indoor pool. Advanced Oncotherapy turned to a range of Autodesk solutions to help them tackle the product and facility design process. They are using Inventor to design parts, Vault to manage data, Fusion Lifecycle for product and process management, Revit for building design, and BIM 360 for construction information sharing. As part of the presentation, Mr. Barker showed a nice video displaying a cutaway of the completed facility combining data from Inventor and Revit, helping the audience understand the scale and scope of their undertaking. To him, Fusion Lifecycle is the lynchpin, managing all master data and a majority of their business processes. Mr. Barker believes having all of this on one platform gives Advanced Oncotherapy an effective and reliable management system, that is also linked with ERP for transactions. CIMdata agrees with this goal of applying a PLM platform to complex situations. The company plans to install their first system in 2019 and to provide their first treatment in 2020.

The Accelerate agenda was designed to provide significant networking time, with long breaks, topics assigned to lunch tables to encourage discussion (CIMdata's table focused on trends in PLM), and sponsor tables in the coffee/refreshment area. This seemed to work well for attendees, with lively discussion at most sponsor tables and in the common areas. It also extended into the customer presentations, where current customers quizzed the presenters with detailed questions, clearly appreciated by the other people in attendance. In our consulting work CIMdata often uses examples from one industry to improve PLM processes and tools in another, so having this type of onsite engagement and collaboration is beneficial for attendees.

Other than a few panel discussions, the conference sessions focused on customer implementations. (Some were surprised that there were no product announcements as at previous Accelerate events, but given all that is on Autodesk's plate and with Autodesk University less than two months away this was not surprising.) Customers represented a wide range of industries, including commercial plumbing fixtures and washroom accessories, high end fire arms, quality control and calibration products, surgical robots, aviation seat belts and airbags, and Coca-Cola. While the customer examples differed, there were some common themes. The promise of PLM to deliver a "single source of truth" was cited or implied in most cases. Most clients have a heterogeneous tool environment and need applications to play nicely with others. While they got into it for "PLM" as they understand it (one speaker said that when assigned to the PLM implementation he had to go online to look it up), most are managing engineering work in process using other solutions. Autodesk announced cloud product data management (PDM) capabilities for Fusion Lifecycle at Accelerate 2016 but none of the presentations cited its use. That said, few of Autodesk's competitors in the PLM market are having much success providing cloud-based PDM yet.

For many, Autodesk's combination of Fusion Lifecycle and Vault addresses their security concerns, keeping their IP inside the firewall and sharing metadata and executing processes on the cloud. Some argue that cloud security, if done right, is actually better than on-premise—but customers want what they want when they want it. Our recent cloud PLM research suggests that the tide is shifting on this issue but it will be slow going for many.

The other commonality is that Fusion Lifecycle customers are applying the solution to a wide range of business problems they face. Its ability to support ready tailoring without in-depth programming skills has helped motivated insiders tackle some very difficult problems. Of course, this allowed one Fusion Lifecycle customer to bite off way more than advised when

they started their implementation with their hardest, least documented, most contentious process. In spite of that initial pain, the customer persisted and now has many successes to show for their efforts.

Friday's keynote featured Mr. Hugo Fiennes, CEO and Co-Founder of Electric Imp, the provider of an Internet of Things (IoT) platform offering fully integrated hardware, operating system, security, application programming interfaces (APIs), and cloud services. Mr. Fiennes has a Zelig-like background in today's smart connected world, with positions as the leader of an MP3 player start-up before the iPod, on the iPhone development team through the iPhone 4S, and a role at Nest (whose US\$3.4 billion funding by Google validated the hype on the IoT market). Mr. Fiennes thinks that IoT offers the opportunity to remake the world, fundamentally changing how it works. To help companies meet this challenge, Electric Imp is focusing on IoT as an inherently cross-disciplinary problem, one that IoT platform companies must effectively span. His cited three main lessons from his work in the IoT:

1. IoT creates a systemic shift affecting all aspects of a company's structure and culture. According to Mr. Fiennes, "good projects" are about changing the business model of a company. Taking this approach provides the opportunity to do other optimizations across your business.
2. Building an IoT-enabled product from scratch can take longer than you expect. If you make something look too easy people will think it is easy, said Mr. Fiennes. For every line of code you write in your product you will have to pay someone to maintain it. That is why Electric Imp, and others, are taking a platform approach that supports codeless development by user organizations, leaving the coding to the experts (we hope).
3. Partners are key!

Mr. Fiennes went on to describe his innovative partnership with Autodesk on the IoT. Autodesk commissioned the creation of the free "IoT Discovery Toolkit Powered by Electric Imp," available to all Accelerate attendees. The package includes hardware and other elements to help users test ideas and leverage what they learn. (More information can be found at <http://autodeskfusionconnect/toolkit/>.)² This was an interesting and exciting move by Autodesk, who has its own IoT platform. Both companies share the same problem: increasing the size of the pie—the size of the IoT market reachable for their offerings. Companies need help understanding how to best employ the IoT and a package like this could be a good way to help small companies get started. We hope that next year some Accelerate speakers will describe their IoT journey that started with the toolkit.

In conclusion, Autodesk Accelerate successfully convened Autodesk Fusion portfolio customers to share their early successes and missteps applying the solution to their pressing business problems. Many already see Fusion Lifecycle as a core strategic asset powering people and processes across their business. Investment analysts talk about "stickiness," or what makes solutions hard to dislodge once they are in place. Becoming strategic is surely a path to sticking. CIMdata looks forward to seeing how Autodesk will continue to evolve their Fusion portfolio to provide more complete support across the product lifecycle, while maintaining their willingness to support the heterogeneous solution environments demanded by most industrial companies.

² <http://autodeskfusionconnect/toolkit/>

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 through the application of Product Lifecycle Management (PLM). CIMdata provides world-class knowledge, expertise, and best-practice methods on PLM. CIMdata also offers research, subscription services, publications, and education through international conferences. To learn more about CIMdata's services, visit our website at <http://www.CIMdata.com> or contact CIMdata at: 3909 Research Park Drive, Ann Arbor, MI 48108, USA. Tel: +1 734.668.9922. Fax: +1 734.668.1957; or at Oogststraat 20, 6004 CV Weert, The Netherlands. Tel: +31 (0) 495.533.666.