

LNS Research:

Integrating the Digital and Industrial: GE Minds + Machines 2015

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In its fourth year, GE Minds + Machines did not disappoint. In fact it was unique in the industrial software space, from the executive speaker lineup, to the waterfront location in San Francisco, to the entrepreneurial vibe and excitement, to the 400 onsite registrants that had to be turned away because of the fire marshal, the bar has been raised.

Jeff Immelt, GE CEO and Chairman, kicked off the festivities with a compelling key note defining GE's vision for the industrial internet. He continued by explaining the 5 year journey GE has been on to internally realize the Industrial Internet, why he believes the future of GE is not being an Industrial or Software company but a hybrid Digital Industrial company, and why the time is now for other industrial companies to pick friends on the journey of digital transformation.



In defining the Industrial Internet and sharing the GE journey many GE examples were cited, including: GE locomotives that are mobile data centers, GE turbines that are self-optimizing, and the Predix platform that puts all these Smart Connected Assets on the GE Industrial Cloud. In fact, much of what was presented by Jeff Immelt aligned to LNS Research thought leadership in regards to the Industrial Internet of Things (IIoT), Industrial Big Data, Smart Connected Assets, and Smart Connected Operations. The only real issue LNS would take with anything Immelt presented was the idea that the CIO is becoming king of industrial companies. Although we agree that over the past decade the CIO has moved from a cost center to value enabler; the business trends enabled by the IIoT will only increase the importance of collaboration between business and IT leaders, not the creation of fiefdoms. Business leaders will have to become savvier in the use of technology and how to make technology decisions, and the CIO will have to become more business and operations savvy as well.

Bill Ruh, Chief Digital Office GE Digital, followed Immelt with a more detailed discussion of the business trends behind the Industrial Internet and the offerings GE Digital has and is developing for internal and external customers. Ruh cited New Business Models, a Cloud Based Platform, and IT-OT Convergence as the top trends behind Digital Transformation. LNS certainly agrees with New Business Models and IT-OT convergence as top trends, but would like to see Ruh push beyond just discussing a Cloud Based platform. Industrial companies will likely pursue a hybrid strategy when it comes to cloud for the foreseeable future and although the cloud is an important piece of the IIoT platform; it is just one of the needed components, along with connectivity, big data analytics, and application development. Many of these also exist in other areas of the GE portfolio and with partners. Fortunately, GE's announcements around the Brilliant Factory should help provide this push.

Brilliant Factory Becomes an Ecosystem Play for GE

In a bold move Jim Walsh GM GE Intelligent Platforms, Howard Heppelmann Vice President and GM Connected Products Management PTC, and Bryan Tantzen Senior Director Internet of Things Manufacturing Cisco announced a joint partnership for delivering the Brilliant Factory. Both companies

were already GE partners, but this new announcement represents an increased focus on the space with executive sponsorship, a strong go-to-market plan, and a shared vision for the IIoT and Brilliant Factory.

As mentioned above, it seems as if every vendor in the IIoT race today wants to be positioned as a platform. GE Digital along with PTC and Cisco, are now in a position to lend clarity and define what the full platform should be, the parts of the platform that are specifically delivered by Predix, Cisco, and Thingworx, and the parts that are specifically delivered by others. For years now LNS has been pushing the ecosystem approach when it comes to the IIoT platform and this announcement is in alignment with that thinking. We hope that these three companies don't shy away from the heavy lifting in defining a shared vision for the space and where the compliments between product sets exist; which will be good for everyone but especially the customers and prospects already asking these questions.

Steady Progress Being Made in APM Messaging & Capabilities

At last year's GE Intelligent Platforms Users Group Meeting Asset Performance Management (APM) was one of the key focus areas. GE has long had a portfolio of APM related applications and capabilities, but they have been sold as individual products. At last year's event GE brought a coalesced message to the market about their APM capabilities, but the actual delivering and marketing of those products was somewhat disjointed. This year at Minds & Machines GE has made considerable progress in not only crafting a cohesive and coherent APM story, but in organizing itself to deliver on their APM promises.

The reorganization earlier this year to bring the APM and MOM solutions together under the GE Software function and the new GE Digital business has borne fruit. GE was able to demonstrate several very powerful examples of APM driving vastly improved performance and much greater reliability in the utilities sector, energy sector and in both rail and aviation. The integration of the SmartSignal, Csense and other tools with the Predix platform has allowed GE to deliver some impressive results. This is not to say all is perfect. Practical large scale APM implementations delivered on Predix in a heterogeneous environment still needs to be proven and the Meridium partnership within the Oil & Gas groups Bentley-Nevada family still remains as a somewhat "tacked-on" aspect of their larger APM story. At least GE recognizes this and is giving assurances that they are working on crafting a more integrated approach to coupling Meridium into the APM portfolio.

Overall, GE demonstrated that they are well positioned to take a leadership role in APM with customers that wish to leverage them for both their technology and their domain expertise. As in all the other GE Digital solution families GE's ability to pilot technology and solutions in its own operation gives it a perfect platform for development and in APM this is especially true. Any business, GE hardware user or not, could benefit from listening to GE's APM story. Even if you decide to pursue an alternate solution, GE can at least provide you with a picture of what it should look like. For many companies the decision to then use GE might make sense even if it is not their dominant automation layer solution.

LNS Research Take

It's been a long time since the lights shone so bright at an Industrial software user conference. Perhaps not since the original e-commerce, battle of supply chain algorithm, and internet bubble, has there been so much hype. Despite the hype, it is clear that GE is making substantive investments both in its own transformation and the development of solutions for customers. From the 1,000+ developers now working for GE in the valley, to the numerous poached SAP'ers and Cisco'ers now in executive roles

across GE business units, to the number of internal products and plants using Predix, to the creation of GE Digital, the future looks bright.

In side-bar, off the record conversations, multiple GE customers and prospects (Fortune 500 companies) were happy to reveal that even though they had previously been in wait and see modes, this conference may have let them see enough to stop waiting and start trying. LNS believes that the GE Digital story is compelling and both long time MES/MOM, APM, and Automation customers as well as those companies that have traditionally worked with other vendors should take a look and learn.

Moving forward, the only thing that may stand in GE's way is its own unrealistically high expectations and lack of patience. The pace of change in industrial settings is just not the same as IT or consumer settings. Although GE is admirably trying to change the paradigm, with goals like connecting 100 internal factories in 1 year, having 100,000 developers working on Predix in the next 2 years, and dramatic short term revenue targets driving Brilliant Factory partner relationships, even if GE accomplishes this in 3 years it would be impressive. But of course this is not how GE is thinking, nor is it how its partners are thinking, but perhaps a bit of Silicon Valley lean startup thinking is just what we all need.