

HCL's DFX Insights '18

CIMdata Commentary

Key takeaways:

- *CIMdata was impressed by the level of satisfaction displayed by HCL customers including presenters from major US industrial users.*
- *DFMPro's new costing module extends the suite of Design For X (DFX) applications to help companies determine what a product should cost.*
- *Many customers noted that every very experienced organization made the same DFX mistakes over and over, likely due to the ad-hoc way DFX knowledge is shared and used within organizations.*

CIMdata attended the DFMPRO annual user meeting, DFX Insights '18, in downtown Detroit at the Renaissance Center. The one-day event was focused on the DFMPRO application, one of several products from HCL. The event is billed as one "that connects industry leading product design experts, technologists, and thought leaders." Attendees from automotive, A&D, construction equipment, high-tech electronics, and leading companies from other industries gathered to discuss their experiences and learn.

DFMPro is a design validation solution that helps ensure that designs can be produced. It supports injection molding, sheet metal, machining, casting, welding, tubing, additive manufacturing, and assembly processes. It has hundreds of rules encoded in it and is extensible. CIMdata has [previously commented](#)¹ on the product which is different from CAD file checkers as it validates models to design for manufacturability guidelines rather than standards for CAD data creation.

Mr. Swadhin Bhide, Director of Product Management for HCL Technologies Ltd. gave the opening keynote. He talked about DFMPRO and the other products his group develops including Glovius, a multi-CAD 3D visualization solution; CAMWorks; and GeometricStackup, a 1D tolerance analysis tool. The core of Mr. Bhide's presentation covered the results of a survey HCL did on DFX practices in industry. Thirty-four percent of the respondents said DFX information was obtained "primarily through intermittent trainings only" and an astounding 57% said "primarily through word-of-mouth and experience passed on through generations." Furthermore, only 17% of the respondents said they had DFX tools available at an organizational level, and 58% said they had no DFX tools. CIMdata finds these results believable, but considering all the effort companies have made about process improvement and the efforts put into Lean and Six Sigma programs we are surprised DFX penetration is not higher. The good news is there should be a lot of low hanging improvement opportunities.

Speakers from a US automaker, a medical imaging device manufacturer, and a networking device producer all described the value they received from using DFMPRO within their companies. All noted the usefulness in that the software enabled designers and engineers to identify issues early in the design phase rather than later in the process when changes are more expensive. A big surprise noted by CIMdata was that several attendees mentioned their internal experts regularly made the same mistakes over and over, but fortunately they were identified by DFMPRO early in the process.

¹ <https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/3345-design-with-confidence-commentary>

Industry analysts delivering presentations included Mr. Joe Barkai, Mr. Vikram Bhargava, and Mr. Tom Gill. Mr. Barkai, [a consultant, speaker, author, and blogger](#)² presented how companies need to stop repeating the same mistakes over and over and how to avoid that issue by capturing and reusing knowledge. Mr. Bhargava Global Engineering Consultant & Trainer, and author of a new book on [robust plastics product design](#)³ talked about his experience developing plastic products and how design for manufacturability was a game changer at his employers when he worked in industry and with his consulting clients. Mr. Gill discussed Model Based Enterprise (MBE) and how design for manufacturability tools such as DFMPPro are a critical solution within MBE.

Mr. Prashant Chandanapurkar, Senior Program Manager for HCL Technologies Ltd., delivered a presentation on HCL's new cost feedback module for DFMPPro. His well understood premise, shown in Figure 1, is that it can be orders of magnitude cheaper to catch errors in the design phase.

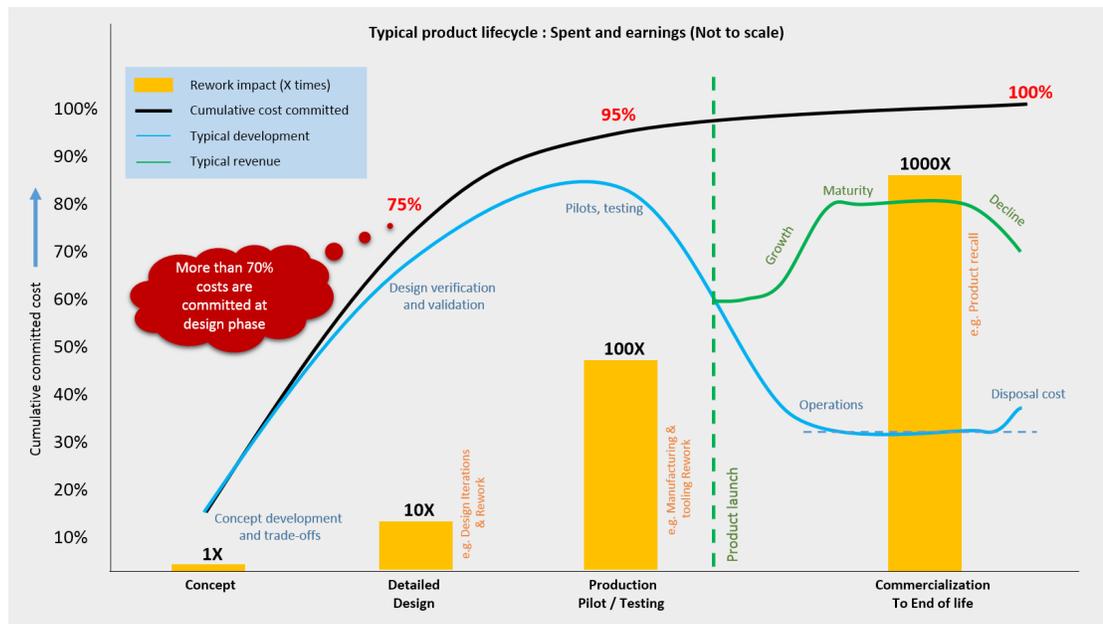


Figure 1 – Identifying Cost Drivers Early is Critical
(Courtesy of HCL)

Mr. Rahul Rajadhyaksha, Product Management at HCL Technologies Ltd., gave a brief history of how DFMPPro has evolved since 2008 and where it is headed. At a high level, today, knowledge is manually captured as rules that get executed, however, over the next 5 to 10 years it will evolve into a much more automated process due to capturing data from manufacturing process digital twins and through advances in machine learning technology. This aligns well with CIMdata's view of the future. Beyond the product vision Mr. Rajadhyaksha also gave pointers about how to implement DfX now and showed how it can be incorporated into enterprise process models and MBE to support the product lifecycle in a holistic fashion.

² <http://joebarkai.com>

³ https://www.amazon.com/Robust-Plastic-Product-Design-Holistic/dp/1569905800/ref=sr_1_1?ie=UTF8&qid=1519135405&sr=8-1&keywords=Vikram+Bhargava&dpID=41eJ24BKE6L&preST=_SY291_BO1,204,203,200_QL40_&dpSrc=srch

Conclusion

CIMdata was impressed with the passion the attendees showed and how they are improving the competitiveness of their companies with design for manufacturability and in particular DFMPPro. DFMPPro has enabled them to validate the manufacturability of their products before production improving their business performance. Also impressive was the lack of complaints, it is rare to attend a software focused conference and not hear at least some grumbling. The DFMPPro customers were universally positive. The new cost analysis capability and planned enhancements will make DFMPPro even more capable. CIMdata is already looking forward to next year's event to hear about more successes.

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.