Leveraging Technology to Achieve Engineering Democracy

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Technology represents innovation, which changes the rules of the game and accelerates it. Customers can now leverage the power of technology in software engineering to gain a competitive advantage. Small medium enterprises can alsobe more successful by getting the right technology through the door to compete with the bigger players. Enterprises adopt best practice with technology to achieve engineering democracy, as we look back to our roots at MIT to look into the future to harness the power of process software for the user to collaborate better than ever before. This byline also includes commentary on how mobility and cloud computing can help drive use adoption of aspenONE software.

Looking backwards to gain momentum forward

In the mid-1970s, computer programing was still a fairly new discipline and its application in solving chemical engineering problems was an exciting field. The ASPEN Project first started at the Massachusetts Institute of Technology (MIT) and focuses on computer aided chemical engineering. It was an inflection point for the use of technology to change the game in computer-aided chemical engineering. This trend was then supported by the advent of PCs and graphical interfaces, which democratized the use of simulation tools to give engineers access to technology and help them solve everyday problems. From the very beginning, AspenTech was able to model very 'non-ideal' chemical systems and 'non-ideal' thermodynamics, which no one else could. The development of PC-versions of AspenTech solutions in the mid-1980s and early-1990s unleashed access to our technology that freed users from the mainframe. The mobility that was associated with being able to run our solutions on PCs really revolutionized our customers' use of our products, as well as the industry, as a whole.

In the mid-1990s, development of the first graphical user interface opened up the use of our tools to a much larger market. It reduced barriers, enhanced ease-of-use and increased the sheer number of people that use our products. Another landmark achievement of AspenTech was the acquisition and integration of some of the best companies and technologies in adjacent areas such as in costing, equipment design and plant automation and manufacturing solutions. This helped to take our capabilities beyond the core simulation business to cover a larger aspect of the engineering workflow, moving, in particular, to plant operations and supply chain management.

Constant need for innovation

At AspenTech, our emphasis on quality allows us to adopt rigorous project management techniques and processes have allowed us to develop and deliver our products on specifications and on time. We have also seen the focus on core simulation problems evolve into a holistic process engineering suite of activity. Conceptual design is where simulation is primarily used but through acquisitions and through focusing on engineering workflows, we can provide solutions that go beyond conceptual engineering. This cements the change to provide a more integrated solution that is able to manage and handle the engineering challenges of the entire supply chain.Today, aspenONE solutions are used by virtually every leading company in the process manufacturing industry. Over 100,000 users at over 1,500 companies have come to rely on us to achieve superior financial and operating results.

By using technology as a leverage tool, all engineers can now achieve engineering democracy to improve energy efficiency and business visibility to stay ahead of the change curve.

Not resting on our laurels

Most recently, AspenTech was awarded the Best Energy Management Technology at Asian Manufacturing Awards 2013 based on the deployment of AspenTech's software at Korea's largest chemical company. LG

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Chem achieved a 15% increase in plant efficiency and reduced energy use by improving heat recovery. This award accolade is momentous because Asia Pacific is home to an increasing pool of process manufacturers and AspenTech plays a key role in helping companies achieve their operational goals in order to position themselves for long-term success. However, more strategically, there is one challenge the chemical engineering industry has to tackle – the evolutionary move away from the discipline's traditional areas at college. This results in fewer chemical engineering graduates to support the fundamental areas of the discipline, which is AspenTech's core technical expertise. By using technology as a leverage tool, all engineers can now achieve engineering democracy to improve energy efficiency and business visibility to stay ahead of the change curve.

Tapping into the power of mobility

The future of software engineering in the process industries is very much tied in with what is happening outside of the process industries, particularly in terms of the broader IT trends. In the last decade, in particular, we have seen significant advancements in terms of Internet capability and in mobile applications. The equivalent computing power of that first PC, which we built at AspenTech, is now far surpassed by the computing power in your typical mobile device. The ability of tools to run in the cloud and a range of other IT advancements is really going to impact software engineering for process industries going forward. The mass adoption of mobility has led AspenTech to introduce the industry's first web-based engineering and manufacturing software for process modeling and manufacturing in 2013 this year. The new aspenONE features a web and mobile interface that allows process industry professionals to work with aspenONE software through web-enabled devices. Users can now access critical information anytime from anywhere through this one single user interface with no specialized application training. This seamless user experience allows engineers and plant operators to change work locations without losing project work and find specific process information across their enterprise in seconds via Aspen Search, AspenTech's search engine designed for the process industries.

Harnessing cloud computing for the process industry

The unprecedented ability of people to be able to easily access information that waspreviously unavailable to them or difficult to access will magnify the impact that engineers can have on their organizations. In 2013, AspenTech has also introduced aspenONE Exchange, the first content marketplace for the process industries. This industry first concept from AspenTech revolutionizes process design by providing engineers with a one-stop shop to source equipment data, third-party content, and AspenTech resources. By referencing design information hosted in aspenONE Exchange, process engineers can build more comprehensive and more accurate models faster. The power of cloud computing has pushed the boundaries of usage for better and faster collaboration than before.

Moving forward in 2014 and beyond, we expect to cotinue to focus our future development making data and models available to our customers through the Web and the cloud. We envision being able to have the full power of tools available for customers anytime and anyplace through mobile applications. The sheer computing power on demand is more likely than not, allow the industry to visualize, analyze and solve problems. This is exciting because this speed of collaboration is unprecedented and will drive greater usage of aspenONE to take AspenTech to the forefront of the industry.

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