MSC's Growing CAE Technological Base

CIMdata Commentary

Over the past several years, MSC has been building market awareness around their solutions that are targeted at product development enterprises. These have stressed the role of simulation data management in expanding analysis and simulation beyond their traditional user base of analyst specialists and engineers. We have heard some people in the user community wondering if MSC is losing sight of their deep roots in developing new and compelling technologies and solutions that support the day-to-day needs of analysts and engineers to deeply evaluate and simulate new products. It is CIMdata's opinion that this has not been the case at all and we will provide some of the reasons that we believe support this conclusion.

A very good example of building out the technology is MSC MD (multi-discipline), a solver framework that has been developed, and continues to be refined, to support multi-disciplinary, coupled analysis and simulation. It builds on the core elements of CAE codes including Nastran, Dytran, Marc, Adams, and Easy5 with pre- and post-processing from Patran. MD is targeted at people who need to evaluate systems that have dynamic and static structures combined with thermal conditions and motion. Thus, it provides a natural path from traditional single discipline engineering simulation to multi-discipline system level simulation. The development of MD is a major step for MSC in providing organizations with the tools they need to apply full system simulation to the very complex products that customers are demanding today, improving design speed and accuracy.

Another prime example of enhancements to tried and true techniques is the continued enhancement of core FEM solvers such as Nastran. MSC reports that more than 1,000 enhancements have been made to their collection of solvers during the past year.

Beyond changes in software, development of support for high-performance computing has enhanced both serial and parallel computing methods to greatly improve the speed of analyses such as those provided in MD. MSC claims important speed enhancements of over 80 percent when compared to the early versions of MD. This work continues apace, allowing specialists and engineers to do more simulations as well as more complex simulations.

MSC also has a strong acquisition and partnership program in place to augment its internal development efforts. The acquisition of Sinda in 2008 has added an advanced set of thermal analysis tools as well as a team with 25 years of thermal analysis experience that can continue to maintain and enhance these tools. The Sinda tools are being integrated into MSC's suite to enhance the value of its thermal-structural coupled simulations.

VISTAGY is a recent example where MSC has teamed with a third party to add very specialized functionality to support and improve the iterative composites design and analysis process. This partnership should allow MSC to expand its offering of new techniques without taking resources away from developing and supporting its existing suite of products.

MSC has a large and capable development organization that includes subject matter experts in a multitude of engineering analysis and simulation areas. These important developments are being undertaken with a full understanding of modern product engineering concepts and how these can be simulated in the virtual environment. This is not the work of a few grey-

haired Fortran programmers stuck in a windowless closet and fed on gallons of coffee. The MSC team is highly experienced and has diverse technical talents. It is our opinion that this team continues to grow, with resources being added as knowledge of new methods is acquired—through acquisitions, partnerships, and new hiring. Thus, we believe that MSC is able to mount new product development efforts while continuing to maintain the existing technologies upon which their customers rely.

About CIMdata

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