NEW PRODUCTS, SAME VALUES,
MORE DIFFICULT PROBLEMS

Designing new products for today's connected world doesn't necessarily mean new engineering challenges, it just means that the engineering challenges we wrestle with on a daily basis have become a whole lot more difficult to overcome. While product values such as quality, innovation, time-to-market and cost control will continue to separate the winners from the also-rans, the winners will be those who can best adapt to the step changes in engineering challenges in this rapidly shifting landscape.

By **Rob Harwood**, Director, Industry Marketing, ANSYS

This edition of *ANSYS Advantage* is focused on the engineering opportunities and challenges introduced by the fast-growing Internet of Things, or IoT. But, what is the IoT?

Often, we think of the IoT in terms of things. Cell phones, tablets and other personal electronics garner much attention based on the worldwide explosion of personal technology devices — and with good reason. According to Gartner, a leading information technology research and advisory company, by 2020 more than 26 billion personal devices will be in use, generating over $300 billion in revenue and over $1.9 trillion in global economic value. But today, an exciting trend in IoT is the expansion of connected things into the industrial world—referred to as the Industrial Internet of Things (IIoT). This is mirrored in almost every industry sector, including connected cars, wearable medical devices, drones and even military applications.

But the IoT is more than things. It also includes the robust global network that coordinates and connects these things to one another, as well as the cloud, which consists of data centers that host the vast collection of software that is able to translate the data from the things into actionable intelligence.

Each of these components of the IoT must not only be engineered for optimal performance on its own, but must perform efficiently when integrated into an IoT solution.

Whatever your industry, the things, networks and cloud systems that make up the IoT will impact your company, creating radical changes in your business model and potentially your product line, as you install advanced communication, sensing and other

> "Whatever your industry, the IoT will impact your company."

capabilities. At ANSYS, many of our customers express concern about what that impact will be — and how engineers can lead change, instead of respond to it.

While the IoT might seem like a brave new world, the core tenets of product development leadership still hold. Your customers are looking for robust products that perform as expected. These products allow your company to minimize warranty expenses and uphold your product promises. You must still focus on innovations that improve product performance and position you for a strategic edge—and you still need to launch products as quickly as possible to stay ahead of competitors. And, you must minimize the internal cost

of product development to maximize profits.

Many fundamental engineering challenges have not changed in light of the IoT. These challenges just became more difficult to overcome. We have identified a number of common, traditional engineering challenges faced by our customers that are significantly more complex as a result of the pressure to develop IoT products. These include size, weight, power and cooling, sensing and connectivity, reliability and safety, and integration and durability.

Our research with the Aberdeen Group has shown that best-in-class companies address the increased difficulty in these engineering challenges by breaking down the silos in their engineering organization; simulation is a key part of this strategy. So whatever the next generation of products looks like, engineering simulation will remain a critical tool, becoming even more essential for success in the IoT economy. With its full range of simulation capabilities, ANSYS stands ready to support you as you embrace the opportunities presented by the IoT. ⋀

Why Engineering Simulation is Critical to Your Smart Product's Success in the Internet of Things
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