

# UTILIZING SIMULATION TO DRIVE INNOVATION AND TOP-LINE GROWTH

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Simulation usage throughout the product development lifecycle has undeniably grown in recent years. The primary drivers behind this increased significance are the improvements in time-to-market, product quality, and overall cost. However, the ability to predict product performance faster and more reliably has also allowed designers to release more innovative offerings, open up new market opportunities, and ultimately, fuel top-line growth for the business.

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# 73%

**of companies surveyed stated they want to use simulation earlier and more often in the development process.**

## Simulation is No Longer an Option

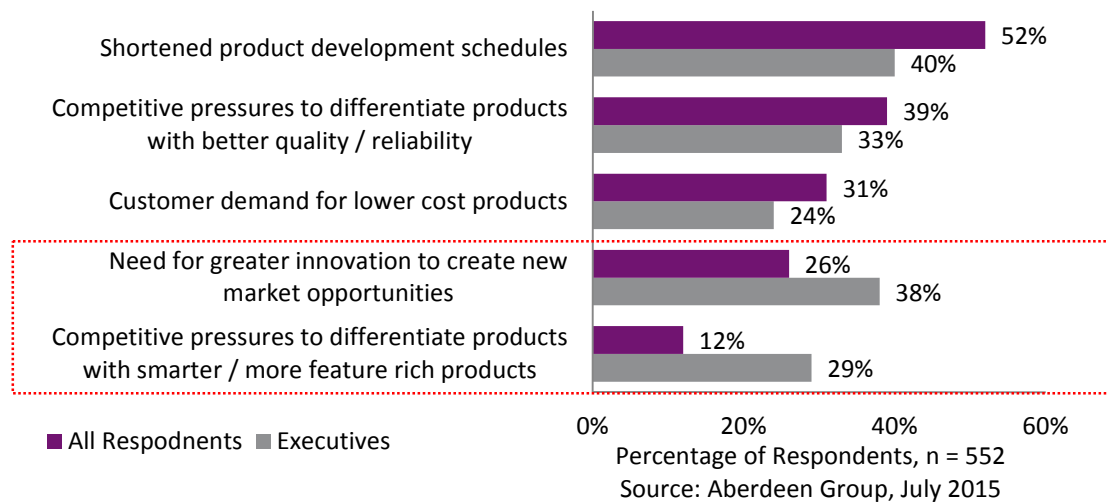
New products are often an organization's most important source of revenue. However, these can also represent one of the riskiest ventures a business undertakes. Constantly changing consumer demands, shrinking development windows, limited resources, and the need to produce products at competitive prices are persistent concerns for organizations today.

Simulating product behavior has historically been integral to larger, complex industries like automotive or aerospace & defense. However, with the many benefits of knowing how a product will perform prior to testing, simulation is being adopted by a majority of SMBs across a broad spectrum of industries.

Today, most companies turn to simulation to help designers make effective decisions around product development. In fact, almost three-quarters of companies today state that they want to further increase their use of simulation during development (see sidebar). Simulation is truly no longer an option for companies that design and deliver products. Not surprisingly, the top pressures driving companies to invest in simulation are

the benefits to development time, product cost, and quality. These efficiency-based drivers are important and tangible benefits associated with simulation adoption. However, there is a growing segment of individuals, especially among executives, that have realized the impact simulation can have on top-line growth (Figure 1).

**Figure 1: What is Driving Investments in Simulation?**



Product development is evolving. Concepts like the Internet of Things, sustainable or ‘green’ products, the use of advanced materials, and smart products put a new focus on innovation and competitive differentiation. Companies need a better understanding of product behavior to enable the innovations that will create the new market opportunities needed for new revenue streams. Simulation can provide this insight.

### Simulation and Top-Line Growth

For the most part, companies are focused on satisfying their most immediate concerns first. The first concern for many within product development is to ensure that existing product schedules do not slip as a result of any new initiative, regardless of whether it results in increased profits or greater profitability. Simulation is evolving from solely a design verification tool (to

Innovation is easier said than done. Companies face a range of challenges that obstruct their ability to develop and execute on delivery of innovative product concepts (all respondents):

**Challenging to free up employees from current responsibilities to innovate: 60%**

**Shrinking time-to-market windows: 43%**

**Getting innovators to focus on solving the right problems: 42%**

**Assessing commercial ROI of new product innovation: 37%**

**Work environment not conducive to developing new products: 27%**

“We have been able to generate more ideas and test concepts because of virtual simulation. More product development opportunities now exist. Innovative products will be able to be moved through the development process quicker.”

~ Nicholas Findanis, Research and Applications Engineer, Pentair Environmental Systems

reduce physical testing costs and product development time) to a key enabler of product innovation and market share when used up front in the design process.

Building and testing design prototypes virtually allows for hundreds or even thousands of permutations to occur rapidly. This allows designers to spend more time evaluating risky, but high potential, ideas. Aberdeen isolated those respondents who indicated top-line growth as a primary driver to their simulation investments to understand the impact this approach can have on company performance. Table 1 highlights the performance of these two groups (*Top-Line Focus* indicates companies who use simulation to drive innovation and product differentiation).

**Table 1: Simulation and Top-Line Growth**

Metric	Top-Line Focus	No Top-Line Focus
Product revenue targets	85%	77%
Percentage of revenue from new products	50%	38%
Change in annual revenue (YoY)	12.7% increase	4.6% increase

Source: Aberdeen Group, July 2015

Clearly, companies who use simulation to drive top-line growth are rewarded for their efforts. However, it is important to not lose sight that it takes more than just implementing simulation to succeed as a business — there are many best practices that go into maximizing its value.

Past Aberdeen research also shows real business advantages to standardizing simulation processes on a consolidated platform of tools (see sidebar). While design efficiency and bottom-line improvements are important goals for any company, this is only half the value that simulation can bring to an organization. The companies best-positioned for success utilize simulation to drive improvements to the bottom- AND top-line.

## A Consolidated Simulation Platform

Aberdeen research also shows real business advantages to standardizing simulation processes on a consolidated platform of tools:

### Companies that use a consolidated simulation platform are:

- 24% more likely to meet product launch targets
- 50% more likely to decrease simulation TCO
- 37% more likely to decrease their overall length of development time

### As compared to those who have not consolidated.

## Simulation and New Product Success

Consumers are demanding more innovative products than ever before. Good engineering decisions are at the root of innovative designs. A great deal of success hinges on a company's ability to balance factors like innovation, time, cost, and quality during the development lifecycle. Using simulation to explore many design options early is essential to cultivate innovation, while maintaining budgets and schedules.

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