Tech-Clarity

How to Empower R&D and Engineering Teams to Innovate with New Materials

Secrets to Growing Revenue and Increasing Profit Margins

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*This summary is an abbreviated version of the report and does not contain the full content. A link to download the full report is available on the Tech-Clarity website, www.tech-clarity.com.

If you have difficulty obtaining a copy of the report, please contact the author at michelle.boucher@tech-clarity.com.

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Executive Overview

It is not easy competing in today's market. Companies today must stand out from a field of global competitors. Plus crowdfunding options such as Kickstarter have lowered the barrier to entry for new startups with innovative offerings. Companies who stay with the status quo will find it increasingly difficult to compete in this market.

Innovation is key to developing future revenue streams. Yet, there is a certain amount of risk when investing in new ideas. How do leading companies manage risks around innovating? How do they empower their teams? How do they optimize their ideas for innovation? What are the risks of staying with the status quo?

Innovation is key to developing future revenue streams.

To answer these questions Tech-Clarity surveyed heads of R&D and engineering, scientists and engineers from 318 companies. Survey respondents were located around the globe and represented companies ranging from under $100 million to over $5 billion. Companies came from a variety of industries including automotive, chemicals, electronics, industrial equipment, and aerospace and defense.

Tech-Clarity identified Top Performing companies to understand which practices lead to success. More successful companies look beyond their products and local expertise to expand their sources of innovation. In fact, leading companies are 66% more likely than their lesser performing competitors to empower their teams with access to the latest academic research. They also invest in technology that will help their teams tap into resources that support the discovery and use of new materials and applications. While the discovery and commercialization processes are critical to bring the right innovations to market, new innovations must also transition from concept to manufacture at scale. Top Performers look at the entire system to successfully make this transition.

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While there is a common view that too much focus on break-through innovation means sacrificing short-term results, the research finds that leading companies balance their innovation portfolios with different levels of innovation, putting more emphasis on break-through and major innovations than their lesser performing competitors.

The combination of this and other findings enables Top Performing companies to experience 2.1 times the revenue growth of their lessor performing competitors. This paper identifies six lessons companies can learn from Top Performing companies and apply to their own businesses to help them realize similar success.

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Recommendations

Based on industry experience and research for this report, Tech-Clarity offers the following lessons:

- Understand the opportunities in new materials
- Consider how to balance the innovation portfolio with different levels of innovation, but ensure greater levels of innovation make up a good portion of the overall portfolio
- Implement the right innovation strategies by expanding sources of innovation, establishing a culture of innovation, and investing in technology to support innovation processes
- Prioritize resources and processes that help accelerate discovery and commercialization
- Successfully transition concepts to manufacture at scale by looking at the entire system
- Empower people with knowledge and a culture of innovation

About the Author

Michelle Boucher is the Vice President of Research for Engineering Software for research firm Tech-Clarity. Michelle has spent over 20 years in various roles in engineering, marketing, management, and as an analyst.   She has broad experience with topics such as product design, simulation, systems engineering, mechatronics, embedded systems, PCB design, improving product performance, process improvement, and mass customization. She graduated magna cum laude with an MBA from Babson College and earned a BS in Mechanical Engineering, with distinction, from Worcester Polytechnic Institute.

Michelle began her career holding various roles as a mechanical engineer at Pratt & Whitney and KONA (now Synventive Molding Solutions). She then spent over 10 years at PTC, a leading MCAD and PLM solution provider. While at PTC, she developed a deep understanding of end user needs through roles in technical support, management, and product marketing. She worked in technical marketing at Moldflow Corporation (acquired by Autodesk), the market leader in injection molding simulation. Here she was instrumental in developing product positioning and go-to-market messages. Michelle then joined Aberdeen Group and covered product innovation, product development, and engineering processes, eventually running the Product Innovation and Engineering practice.

Michelle is an experienced researcher and author. She has benchmarked over 7000 product development professionals and published over 90 reports on product development best practices. She focuses on helping companies manage the complexity of today's products, markets, design environments, and value chains to achieve higher profitability.

About the Research

Tech-Clarity gathered and analyzed 318 responses to a web-based survey on enabling innovation with new materials and applications. Survey responses were gathered by direct e-mail, social media, and online postings by Tech-Clarity, Engineering.com, Materials Today readership, and Elsevier.

The responding companies were a good representation of industries, including Automotive (23%), Chemicals (20%) High-tech and Electronics (19%), Industrial Equipment (18%), Aerospace and Defense (16%), Building Products (13%), Consumer Products (13%), Energy / Utilities (11%), Life Sciences (10%) and others. Note that these numbers add up to greater than 100% because some companies indicated that they are active in more than one industry.

The respondents reported doing business globally, with most companies doing business in North America (62%), followed by Western Europe (42%), Asia-Pacific regions (43%), Eastern Europe (17%), Latin America (18%), and Africa (5%).

The respondents represented a mix of company sizes, including 33% from smaller companies (less than $100 million), 20% between $100 million and $1 billion, 34% over $1 billion. 19% chose not to disclose their company size or did not know. All company sizes were reported in US dollar equivalent.

The respondents were comprised of about one-half (53%) who were individual contributors (scientists, R&D, engineers, etc). Another one-third (31%) were manager or director level, and the remainder (16%) VP or executive levels.

The organizational function of the respondents included 9% Chemists, 23% Material Scientists or Engineer, 5% Chemical Engineering or Chemical Process Engineers, 19% Manufacturing Engineers, 26% other Engineering, 10% General Management, and 8% other functions.

Respondents determined not to be directly involved in developing or producing products (including software vendors and consultants) were not included in the analysis. The majority of companies were considered to have direct involvement in developing and/or producing products and the report reflects their experience.