

**MANUFACTURING TRENDS**by Abigail Phillips | *Manufacturing Global* | [www.manufacturingglobal.com](http://www.manufacturingglobal.com)

# The Top 10 Manufacturing Trends in 2015

2015 is shaping up to be a pivotal year for the global manufacturing industry. Manufacturing plants are not longer dirty, dark and dangerous places to work; they house some of the world's most sophisticated equipment, are managed using complex data and software, and run on powerful technology systems. As the concept of a 'smart factory' becomes more of a reality, we take a look at the manufacturing trends shaping the industry in 2015.

**10. INTERNET OF THINGS (IOT) TECHNOLOGY**

The Internet of Things (IoT) allows devices to communicate with one another automatically without human input and is having a profound effect on the manufacturing sector. The benefits of IoT technology include, reduced down time due to the fact that machines can notify mechanics about defects and required maintenance; increased quality; less waste; and greater visibility of the manufacturing floor via big data analytics, which in turn leads to improvements across the board.

**9. SOCIAL MEDIA**

Communicating thoughtfully through social media and other new and secure technologies can help manufacturing firms enhance visibility and improve reputation. In 2015, there will be a much greater emphasis on social communication and Internet marketing due to the fact that manufacturers can monitor concerns, track customer trends and demands, and promote successes for a marginal cost.

**8. ADDITIVE MANUFACTURING**

Additive manufacturing, or 3d printing, is big news in the manufacturing sector. The new technology has captured the imagination of the general public and manufacturing executives alike, however it has also proven to be a game-changer for the industry.

Additive manufacturing technology has evolved so much in recent years, to the point where it can produce components made of metals, mixed materials, plastics and even human tissue. The benefits of 3d printing include shorter lead times, improved quality and reduced waste, flexibility and cost savings. Additive manufacturing is creating a shift in the way

engineers and designers think about product development, therefore changing the way we train future manufacturing employees.

**7. NANOTECHNOLOGY**

Nanotechnology is one of the most interesting – and potentially game changing – technologies to come to the fore in recent years. Nanotech, or the manipulation of matter on atomic and molecular scales, is currently used to describe micro-scale technology in everything from space technology to biotech. As such, nanotech has already changed the world. But the fruition of atomically precise manufacturing (APM) — nanotech's next phase — promises to create such 'radical abundance' that it will not only change industry but civilization itself.

**6. NEXT-SHORING**

The rise of a more technical labor force to manage supply chain operations — combined with rising wages in Asia, higher shipping costs and the need to accelerate time to market to meet retailer and consumer demands — has led to more companies shifting their manufacturing strategies from outsourcing overseas to developing products closer to where they will be sold. "Next-shoring," as this tactic has been dubbed, allows manufacturers to increase the speed at which product is replenished on store shelves. The faster inventory can be moved to the consumer, the sooner the costs to warehouse, ship and dock goods can be freed up.

**5. 'SMAC STACK'**

A manufacturing comeback is being driven by SMAC — social, mobile, analytics and cloud. The SMAC Stack is becoming an essential technology tool kit for enterprises and represents the next wave for driving higher customer engagement and growth opportunities. The need to innovate is forcing cultural change within a historically conservative "if it's not broke don't fix it" industry, and SMAC is helping early adopters in the manufacturing market increase efficiencies and change.

**4. MARKETING**

More than in any other industry, manufacturing relies on

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innovations in technology to drive efficiencies, reduce production costs and help bring products to market. But can the same be said of manufacturers' use of technology to help drive their marketing and sales? The answer up until now is a resounding, 'no'. For a long time, manufacturing and marketing have been worlds apart and manufacturers have left it to external PR companies to sell their products – not any more. In 2016, marketing and manufacturing will become one and the same.

**3. CAPITAL INVESTMENT**

Though the slow economic recovery continues to hinder expansion and growth opportunities, recent government and industry reports show an uptick in capital investment funding. As manufacturers become focused on capturing value through innovation, original design and speed to market, they are increasing spend for upgrading plant, equipment and technologies. 2016 looks set to be the year of the big spenders.

**2. GREATER FLEXIBILITY**

Consumers expect products on-demand and to specification. With the rise of smart factories, manufacturers will increasingly look towards manufacturing equipment that is adaptable and flexible to appease the needs of consumers, while saving waste and downtime.

**1. GREATER VISIBILITY**

The Internet, social media and big data are forcing manufacturers to become more customer-centric. The traditional business-to-business model is becoming outdated because today's connected consumers are better informed and expect products on-demand. Consumers compare, select or buy multiple products with a tap of their smartphone or tablet, and online channels have become their preferred communication platform. This consumer purchasing style is not only having an impact on brand-oriented value chains, but is transforming traditional B2B to B2B2C models.


Furthermore, consumers are becoming acutely aware that manufacturers can measure every aspect of their production, from energy consumed to waste managed and cost saved. With this in mind, consumers are demanding visibility from a sustainability, labour, cost and production perspective, and there is no excuse for not making this available.

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## Limpet Teeth: The Newest Strongest Material Known to Man?

**IN THE LAST ISSUE** of *The Shot Peener*, we listed the Top Ten strongest materials known to man with Darwin Bark spiders' silk as the toughest biological substance. Well, move over Darwin Bark spider, your silk may be replaced by the teeth of the limpet, an aquatic dome-shaped creature.

These findings come from researchers in the U.K. "Until now we thought that spider silk was the strongest biological material because of its super-strength and potential applications in everything from bullet-proof vests to computer electronics," Professor Asa Barber who led the study said in a statement. "But now we have discovered that limpet teeth exhibit a strength that is potentially higher." One of the unique aspects of limpet teeth is that their strength stays the same no matter the size. "Generally a big structure has lots of flaws and can break more easily than a smaller structure, which has fewer flaws and is stronger. The problem is that most structures have to be fairly big so they're weaker than we would like." said Barber. ●



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