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driving a new generation of additive processes that will revolutionize industries. It will also drive a revolution in accounting.

Dave McClure • Jul. 29, 2015

Three Dimensional (3D) Printing is a hot technology these days. And while not exactly new, the massive expansion of applications and decreasing costs of 3D processing are driving a new generation of additive processes that will revolutionize industries from manufacturing and health care to entertainment.

It will also drive a revolution in accounting.

The roots of 3D Printing may well lie with Gene Rodenberry, the creator of the Sixties

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outsourcing of manufacturing overseas, lower costs for consumers, and a major changes in the "social contract" between companies and their employees.

We know this because it will follow the last two industrial revolutions – the manufacturing revolution of the 19th Century, and the computer revolution of the 20th. Both of those revolutions resulted in a surge of productivity, which in turn spurred profitability. They created new winners and losers in the stock markets, boosted middle-class entrepreneurs into the upper-middle class, and poured millions in new capital into the economy.

But these revolutions had their dark side, including changes in legislation and regulation that were necessary to accommodate new processes. The poor generally got poorer as wages dropped, and companies often had to take up the difference by establishing company-sponsored healthcare, housing and retirement programs. Traditional jobs were eliminated, replaced by new processes that demanded new skill sets.

The situation for workers grew so bad that in Holland, disenfranchised workers took to dropping their wooden shoes – called sabots – into the machines to destroy them. This practice was the root of the term, "sabotage."

And accounting was changed in ways large and small. One of the more significant changes was a dramatic increase in accounting fraud, as companies manipulated their numbers and inflated profits to lure investors, influence legislation and shield profits from taxing authorities. In the 20th Century, such "innovative accounting" resulted in a substantial boom in the importance of audits and legislation that included Sarbanes-Oxley. And a decades-long battle – still raging – over the definition of nexus.

Closer to the present are the continuing accounting scandals, the most recent of

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needs of this digital manufacturing industry.

- **Audits will be expanded,** as the supply-chain/manufacturing/marketing/distribution models adjust to the new economy. One example is that insourcing – bringing manufacturing back to the US as the balance of outsourcing to insourcing changes. This, in turn, may result in less accounting for overseas operations, but expanded accounting for global marketing.
- **Wealth management** will be altered by a resurgence of the middle class and a new class of ultra-high income clients.
- **Tax laws will change**, resulting in greater complexity of both individual and business tax returns. One possibility, already being considered by the Commonwealth of Puerto Rico, is a Value-Added Tax (VAT).
- **The social contract** will change again, impacting human resources management. As workers are displaced, they will drop out of the corporate benefits envelope and into tax-supported government programs. Government will likely play a larger role in affordable housing, health care, and retirement programs.

And the list goes on. While accounting firms may not yet have a use for 3D printing as part of a standard practice, no one truly knows how this next generation of robotics and manufacturing will play out. What we do know is that changes in the technologies of manufacturing and business ultimately change accounting, and this technology will be no exception.

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