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New Math For New Technologies In Manufacturing

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Sep 20, 2022, 10:15am EDT

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For decades, manufacturers have relied on cost-savings-based ROI models to evaluate investments in technology. How many dollars can I take out of my production cost if I buy this piece of hardware (traditional approach), or software (growing trend) or replace line workers with robots? These simplified models have served the industry well enough. But they are not up to the task when it comes to today’s digital innovation.

New technologies, by their very definition, need new economic models to capture and justify their value. Newer IoT and digital technologies are driving the call for a new way of thinking about—and modeling—ROI, so decisions consider how the solution drives more revenue and are no longer made using cost savings as the primary metric.

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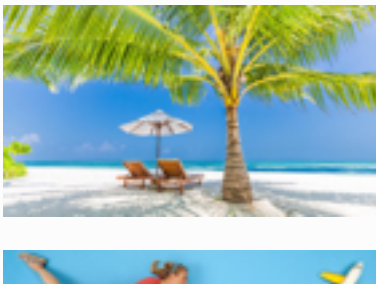
In this article, I’ll focus on why ROI models used to evaluate digital technologies need to include measurement of a solution’s ability to compress time, i.e., achieve better results faster, in order to serve today’s highly dynamic and interconnected manufacturing, specifically:

- What does it mean to “compress time” in manufacturing?
- Why does a solution’s ability to accelerate time-to-insight and time-to-action matter more than cost reduction in the digital age of manufacturing?

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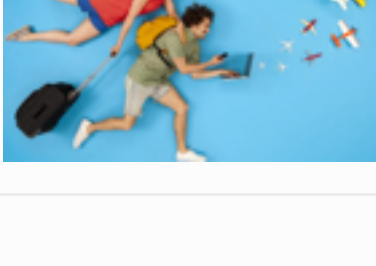
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- How do manufacturers build an ROI model that effectively measures the impact of new technology and ensures that investments deliver value?

Compressing Time: The New Metric For Measuring Innovation ROI In Manufacturing

It is rare to find an ROI model that incorporates the “dollar value” of the time saved by detecting quality issues sooner and being able to scrap/rework faster.

It’s time for manufacturers to take a page from their digital brethren, who’ve begun integrating [testing into the software/system engineering stage](#) in order to find defects earlier. This move to compressing the time it takes to find problems before the product leaves the lab is built on sound reasoning. When issues are discovered earlier, they are less expensive to identify and easier to fix.



This type of testing works in manufacturing as well and can create a powerful foundation for measuring the ROI to be gained from investing in digital technology. When time is compressed in manufacturing, process examination starts at the earliest stages, rather than waiting until the product is completed and shipped. This shift makes it possible to accelerate the time to detect defects, corrective decision and action and ultimately lowers risk, eliminates errors and creates value at each step.

Accelerating The Time To Insight And Decision

Digital technologies compress speed to knowledge and time to action, delivering positive impact on the business in myriad ways. One way to think about it: Which is better, knowing something is wrong before the product leaves the factory, or waiting two weeks to find out the product is failing to perform as promised?

The answer is pretty obvious.

Another way to think about it is in the context of lean operations, where, for example, continuous improvement initiatives measure key performance indicators every, say, 100 production runs. What if those measurements were taken on every single production run? During the run? By measuring performance in real time and, more importantly, providing the insight needed to address anomalies and resolve issues in real time. How much better would the product be then? How much waste would be eliminated? How many ideas for improving the product design or production process would be generated?

ROI models for the digital age of manufacturing will answer the question: How valuable is speed to knowledge and the ability to compress time to action to my operation? Manufacturers who build ROI models that capture what “sooner” means in actual dollars will find themselves in a much better position to invest in—and make the most of—(digital) innovation.

Faster Access To Knowledge + Insight-Driven Decisions = Greater Value

The math will be different. But it is not hard. The easiest way to compute the value of innovation is to identify the fundamental changes most needed to realize the benefits of digitization and determine how accelerating those shifts will transform the business.

To start on the path to smarter, more useful ROI models for new technologies, manufacturers can:

- Start looking for issues and opportunities in processes from the beginning, rather than waiting until the end, when it will likely be too late to recover.
- Ask—and define—the value of speeding the time to insight, decision and action, and what it means to the tried-and-true metrics of productivity and quality.
- Evaluate fundamental changes in the context of speed: What will it mean to achieve changes faster, particularly around shifting the organizational mindset to emphasize value over cost?

Value over cost means optimizing human contributions to the process, facilitating collaboration (standard work designed through collaboration between a line associate *and* an industrial engineer versus simply designed by an industrial engineer) and building fluidity into the operation so that every day is a productive day—and more productive than the previous day.

Whether it’s finding and correcting an issue before it wreaks havoc with liability and brand reputation or bringing new hires up to speed on production tasks more quickly, all have huge economic implications. Building the ability to view the value of new technology through the lens of how quickly value can be created by compressing time is the secret sauce to winning in the marketplace.

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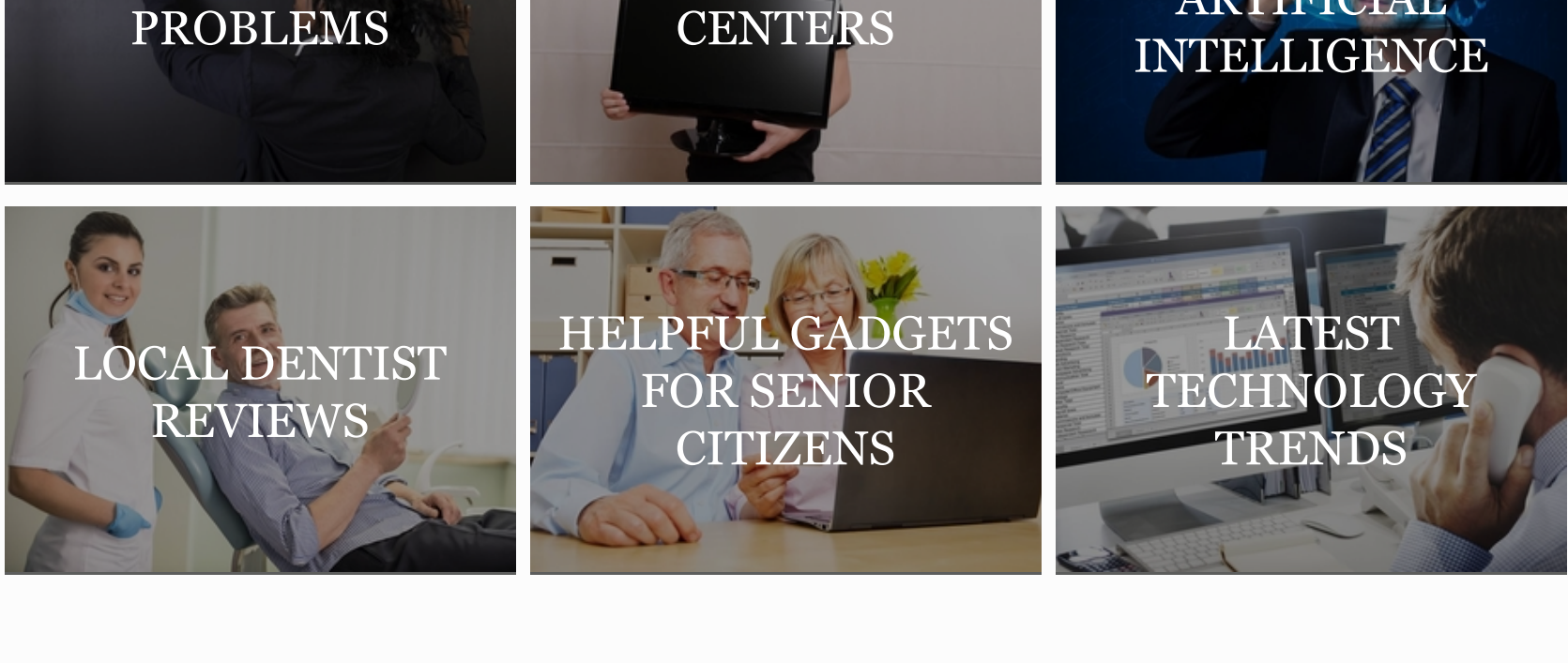
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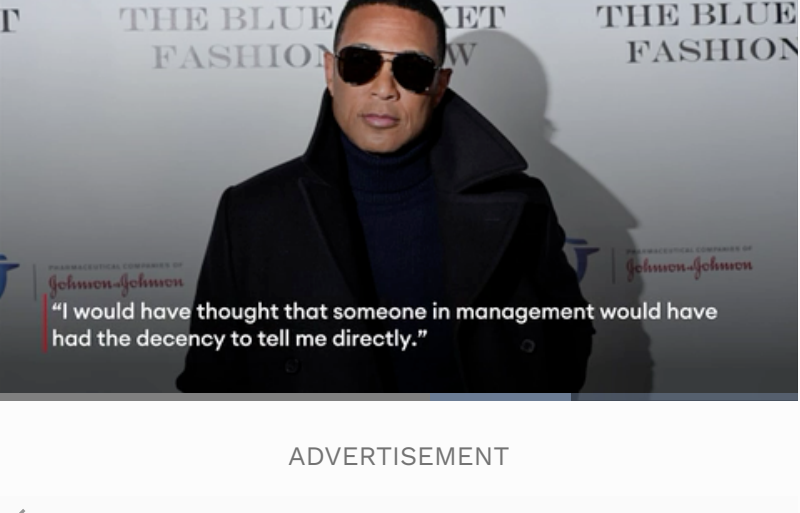
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