

# DISCONTINUOUS INNOVATION



Creating Innovation Leadership Solutions

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Output from the 2017 IRI CTO Forum

The insights from a conversation on discontinuous innovation held with 22 chief technology leaders from large R&D firms.

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## OUTPUT FROM THE 2017 IRI CTO FORUM

“It is more important to respond to discontinuous innovation than it is to detect it,” argued Dan Abramowicz, CTO of Crown Holdings, during the Industrial Research Institute’s (IRI) recent annual **CTO Forum** – hosted by Johns Manville. During the course of the 24-hour Forum, chief technology leaders from twenty two large firms gathered to discuss the topic of discontinuous innovation and how it affects their business.

## DETECTION VS. RESPONSE

The R&D leaders attending this year’s CTO Forum agreed that the response to potentially disruptive innovations vastly outweighs the detection of those innovations. “The trick is to understand what that innovation means to your company” said Craig Robertson, VP of Research and Development (R&D) at National Gypsum Corp. Many attendees felt comfortable with their abilities to detect discontinuous innovation and most had similar mechanisms for scouting and monitoring such developments.

Everyone agreed that sensing disruptive technologies (step 1) is important but widely explored and understood – they know how to do this. Once a technology or opportunity is known, they then explore its impact (step 2). Attendees at this year’s CTO Forum felt they knew how to do this as well. From here onward, however, they need to decide how to respond, on which technology to place their bets (step 3). Those in attendance were less sure about this step. This is where leadership deviates from the known to the unknown and while there might be some best practices out there, it isn’t clear what they are.

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Finally, there is step 4: action. The action taken to respond to a discontinuous innovation is where those CTOs in attendance appeared to struggle the most.

The challenge for CTOs is their ability to see how potential threats may become key components of their business in the future, and success is based on how they respond early on. This includes certain challenges such as: mobilizing senior staff to take on big challenges; finding effective ways to respond to discontinuous innovation; and, organizing one's staff to take on a big, risky project that could transform their market and therefore business. Unsurprisingly, there is no single, straightforward answer. As these R&D leaders all make clear, discontinuous innovations are risky, they present significant challenges in their implementation, and the failure rate for such projects is significantly higher.

## DEALING WITH FAILURE

"When you do [Discontinuous Innovation], the risk of failure is pretty high and maybe the market doesn't mature properly," said Chris Murphy, VP of R&D and Chief Innovation Officer at PolyOne Corp. "I think a lot of companies struggle with that, it's a big risk." Crown's Abramowicz added, "Since the failure rate is much higher than for incremental innovation, learning from such failures is more critical than ever. If we can learn from our failures, we can increase our success rate."

Ideas for handling failure included "Celebratory Wakes," post-mortem reviews similar to how hospitals host Morbidity and Mortality conferences, and awards for failing in a way that teaches the organization something new, among a few others. The focus has to be to draw out the positive learnings and avoid finger-pointing. "Failure is a very negative word especially for those attempting to push the boundaries of innovation," said Tim Swales, VP of R&D and Chief Sustainability Officer at Johns Manville, the host of this year's CTO Forum. "I prefer to use the word 'learnings' or the phrase 'learn fast.' Leaders need to be really engaged with their teams to foster and demonstrate their openness to innovation. They need to drive their teams to be curious not just to report out results."

## INNOVATION CULTURE

For many, the culture of innovation at their firms was the key ingredient. “There’s no real difference between types of innovation, whether disruptive, incremental, discontinuous, or breakthrough,” said Robertson. “It’s all the same, really. What matters in the end is how you respond to the threats and opportunities that present themselves.” To respond effectively, he said, the organization’s culture has to be “set up in a way that encourages your people to take risks, to view the market and their industry through different lenses and to try new things.” He wasn’t alone in this view among the other R&D leaders at this year’s CTO Forum. “Culture is the social behavior and norms of an organization,” said Swales. “If a company’s culture is not open to its people to try new things and approaches in all aspects of their business then they are very unlikely to succeed in discontinuous innovation.”

“It boils down to reward and recognition,” said Robertson. “You know, if one of your guys fails and then gets skipped over for a promotion, that resonates across the workforce and people start viewing failure as a career threat, so they stop taking risks.” The process of creating an effective culture, according to these leaders, is large, complex, and ongoing. “You can’t do one single thing to create an effective innovation culture and, once established, you must continue to work to maintain it,” said Abramowicz.

### About IRI’s CTO Forums

“The topic didn’t matter. Any topic would’ve been good,” said Murphy. “Hearing the viewpoints of Dan Abramowicz [CTO of Crown Holdings], Dan Boss [SVP, GAF Materials], Osama Musa [CTO, Ashland], or Bob Clements [CTO, Kennametal], on any topic is valuable to me. If discontinuous innovation is not important to a CTO, then they probably don’t need a CTO in that company. If innovation culture’s not important to a CTO, then they probably don’t need a CTO. All these topics are important; they all were things I wanted to hear people’s opinions about. What I got out of it I will apply to how I do my job.”

Throughout the discussion, these R&D leaders stressed the value gained by attending IRI's CTO Forum.

- “I have participated in most of the recent CTO Forums and find them an excellent forum to listen and learn from other leaders facing similar challenges in a diverse set of industries,” ~ Swales
- “To learn from peers who are struggling with similar challenges is truly invaluable,” ~ Abramowicz
- “It’s a really great opportunity to listen to other CTOs, to learn about the challenges they face, and to see how they all deal with similar issues and it’s a real treat that allows us to broaden our skills and our understanding of the role we serve in our organizations in new ways.” ~ Robertson
- “If you have questions about how do you do anything that’s in our jobs, there’s probably someone there who’s been there and has insight into it. You network with people and develop relationships with people that allow you to get guidance from peers on how they approach problems that you probably have as well, [the CTO Forum] is a great opportunity to network with people who have similar needs and problems and goals that you have.” ~ Murphy

Attendance at the CTO Forum is by invitation only to facilitate healthy discussion relevant to the agenda designed and structured by the participants. To learn more about upcoming forums, topics, and host venues, please contact Ed Bernstein, [Bernstein@iriweb.org](mailto:Bernstein@iriweb.org).