

Radical Innovation, Part III: Balancing Creativity and Structure

Managers can either squelch innovation or make it bloom. One key is learning the most from every step along the way – whether the effort succeeds or fails, says Kimberly A. Wagner, a partner and managing director at BCG. In Part III of this Knowledge@Wharton interview, Wagner notes that innovation “is something that should be managed and controlled, but in a way that allows the organization to learn, as opposed to in a way that squelches things.”

An edited transcript of the conversation appears below.

Knowledge@Wharton: We’re continuing our conversation with Kim Wagner of the Boston Consulting Group about corporate innovation. Kim’s an expert in this area and she’s co-author of a recent study by BCG titled “Managing the Unmanageable – Radical Innovation.” People might think that the overall level of innovation is up because we’ve got all these wonderful products and you hear a lot about – Apple and Uber and a lot of innovation going on. But actually, when you look at the survey numbers, radical innovation is down from 20% of an average company’s innovation portfolio back in 1990 – to just 10% today. That will probably surprise people because innovation is high-profile, it gets a lot of coverage, but you’re looking at the whole base and you’re saying it’s not the best picture.

Kimberly A. Wagner: Well, it’s not that it’s a bad picture. So, think about what 1990 was? 1990, most people didn’t have an e-mail address. Nobody had desk top internet access – it was something you went to the public library to get or a university library to get. Many people didn’t carry a laptop. Companies were just starting to implement enterprise-wide systems where they would actually understand what inventory they had where, who was where, all of the employee data base was in one place.

So, 1990 was a point where there was a lot of incentive to all of a sudden track things, monitor things, put metrics against things. And the infrastructure, the IT infrastructure was in place to make this happen. Innovation did not escape this desire to have metrics and measurement. People started to measure how many projects do we have? What kind of projects? Do we have

a future cost of goods associated with each project? Do we have a future revenue stream associated with each project? Do we know exactly how many people are on it?

And when you start to put all those metrics in place, you start to say, “Hmm, there’s a whole bunch of stuff we’re investing in that is potentially very high return, if we would actually do the calculation intuitively, but it’s really high risk. And so, since we want to be efficient with our investments and efficient with our resources, let’s focus on the things where things can be predictable.”

There was a big move towards making investments in innovation much more predictable. And that inadvertently drove most innovation portfolios to being very incremental.

Knowledge@Wharton: Incremental and more of a linear process than an imaginative one.

Wagner: Yes. So, linear like, “I have a particular food item. I can make it low fat. I can add ingredients to it. I can make a new flavor of soft drink. I can change the color of the toilet paper.” That kind of incremental thing. “Or I can make a new package.” And the new packaging may actually create new benefits to the consumer but it’s not what you would call a breakthrough. They’re product enhancements.

Knowledge@Wharton: And the management process that is “we’re trying to get more control over the process” ended up changing it into being one of more refinement than radical innovation?

Wagner: Exactly. Because managers got tracked on, “How well did your metrics come out?” And when your metrics started to be, “What was the success to move

from one gate of the process to the next gate?” — any manager would choose those projects that are more likely to get from gate one to gate two and gate two to gate three. And so, through both the talent management process and the project management process, there was an enrichment of those projects that were of lower risk and therefore more incremental. And it took a lot of courage, thought and basically senior management air cover to keep those truly innovative, breakthrough, high risk projects in the skunk works.

Knowledge@Wharton: And as one of your colleagues mentioned in a different setting — sometimes you can get overly concerned about metrics and forget about the goal.

Wagner: Yes. And sometimes you can even over-invest in a project because you were doing the check off the list steps, as opposed to thinking, “Do I really need to do that for this project?”

Knowledge@Wharton: So, it makes it hard to change and innovate mid-stream. Maybe you’re going in the wrong direction and you should be checking what you’re doing and moving elsewhere. Companies might miss that.

Wagner: Yes, and this wouldn’t open it because you wouldn’t want to introduce a loop.... The interesting thing is if you look at most companies — and again, I’m talking about 10 years ago — if you looked at their processes, there’s flexibility for loops, there’s flexibility for going back. If you look at it on paper, you’d say, “Well, the most breakthroughs and innovation is probably not going to make it through. But reasonably good and ... “incremental” will probably get through.

But the other management metrics around it disincentivized anybody from going back. It was almost a demerit if you have to do a loop back. In a breakthrough world, actually it’s all about learning. You don’t have a failure if you’ve learned something. It’s a lot like science. And so, those two systems just didn’t jibe.

Knowledge@Wharton: You were punished in a way if you took too many risks.

Wagner: Well, at least you believed that you were going to be punished, even if you weren’t overtly punished.

Knowledge@Wharton: Are there other root causes when innovation fails?

Wagner: Oftentimes — even now companies will say, “I want to devote a portion of my portfolio, a portion of my investment to breakthrough” — forgetting that breakthrough doesn’t happen very quickly — meaning it’s not going to be an 18 months to market or two years to market. And it will often take different forms as it evolves through the pipeline.

What often happens is a couple of things. One, two or three years later there’s some need to a cut a budget and somebody will say, “Well, what’s this crazy project we’ve been investing in that nobody knows about?” And it gets cut. Or it doesn’t get cut but somebody goes and says, “If you can’t turn this around pretty quickly it’s going to lose its resource.” So, something like that might happen.

The other thing that can happen is oftentimes to keep those projects going they get put into a skunk works, a hot house in a back lot somewhere and they get forgotten. And because they get forgotten they can never get incremental resource or keep going with support.

Knowledge@Wharton: So, no internal champion?

Wagner: No. Or a weak internal champion or the internal champion is thinking about bigger things as opposed to this project and they’ll say, “Yeah, I have to give it up.

Knowledge@Wharton: What about the risk with this of trying to predict the unpredictable? So, Steve Jobs was famous for saying, in a way, “I’m not really worried about what our customer thinks because I know what they want before they know it.”

There’s a balance in there. Someone says, “I want the next flying saucer that’s going to operate on magnets like in Dick Tracey days.” And someone has to be able to say, “We love your creativity but you need to reel it in a little bit.” How do you reel in when you need to, and still encourage the right things? It’s got to be more than pizza parties, right?

Wagner: Exactly. And customer centricity is still important because it’s not about asking your customer

what they want, it's about knowing your customer so well that you know what they want before they can even articulate it. They may be able to tell you about a need and you can find a way to fill that need. Deep customer understanding is very important for breakthrough innovation because it gives you the rationale. It's the goal. "I am creating this product in order to serve this need."

In that instance, how do you keep the Dick Tracey stuff from coming up? One is having some structure around, "Is the technology there to make this happen? Let's take a step back and say, "Do I have all the pieces in place and what are the associated risks? Is the risk that I can't get a certain raw material? Is the risk that this thing can't even be created? Or is the risk just that I'm not sure if anybody's going to buy it and I don't know if I can manufacture it reliably?" Some of those risks around manufacturing and around marketing, you can de-risk in an organized way.

Something like, "I need a new type of plastic that does not exist right now" — that's really early technology development — that's not ready for radical product development.

Knowledge@Wharton: So, you have to legislate keeping an open mind somehow.

Wagner: Yes.

Knowledge@Wharton: And that's part of culture also, which I think you refer in your recent *2014 Most Innovative Companies in 2014 Report*, where encouraging that culture is of course very important.

Wagner: Right. And it's also understanding that there are sometimes great ideas but not great ideas for that company. And then the question is, do you have a piece of the puzzle? And it's about potentially finding partners, and then as part of a joint venture, as part of licensing agreement, you can make something happen.

Knowledge@Wharton: The other thing that was interesting in your study about radical innovation was that in the companies that aren't doing so well, you tend to notice a lack of collaboration within the company, departments or among whoever should be collaborating. Also, externally, they're not collaborating

enough with suppliers and the supply chain, or collaborating enough with customers in whatever ways that they're able to do that.

Wagner: Right. The data in our *2014 Most Innovative Companies Report* reinforced that exactly. The difference between companies that are strong innovators, but incremental in nature, and strong innovators versus breakthrough — one of the things that differentiates them is their comfort with external alliances and partnerships, and how important it is to bring that in. Typically, when you're out there in the brand new space, there are a lot of unknowns and risks that you're trying to manage. It would be foolish to think that all of the experts you need to de-risk those problems are within your four walls because you're talking about something that you don't do right now. So, of course you're going to go out and find an expert.

Knowledge@Wharton: There are some companies that go out and find an expert. I'm thinking of the pharmaceutical industry, where they've had some problems coming up with new blockbuster drugs. One of the strategies is to look around at some of the smaller bio-tech companies, which are doing some really innovative, radical stuff. And there are going to be winners and losers there. So, part of their job now is to identify who the winners might be. At some point, they step in and take them over, they bolt them on to their company. So, isn't that a strategy that can be very workable if you're big enough.

Wagner: It's workable. You have to be careful because you're going to pay a premium. Think of it this way: Tens of thousands of flowers can bloom around and you know that one of them is going to give you the black rose — the thing that everybody is after. One of them is going to deliver that and you just don't know which one. So, you can let them all go and then you find it and you then say, "I'm going to pay a premium for it." Or you can be the one that tries to grow them all — all 10,000 of them. You pay for all 10,000 of them. You have 9,999 failures that you've paid for. And then you have the one that you got quote "at cost" but it's had a huge cost because you paid for all those failures.

What many people don't realize is that the science underpinning mechanisms of disease and the

pharmaceutical industry is moving so fast in so many exciting ways that no one company can do it all. And they've realized that and that's a wonderful thing. Now it's about, how do you quickly incorporate the new science as the proof of concepts are coming?

Knowledge@Wharton: There are also some findings in your study about how autonomous organizations with minimal supervision can work well, depending on the right circumstances, versus other kinds of organizations. Could you talk about that dichotomy of what that balance is about?

Wagner: One of the challenges is: Sometimes you figure that for breakthrough innovation to survive in your big company of tens of thousands of people, it needs its own little garage to work in. And you're trying to re-create five guys in a garage.

That can backfire if they don't have a connection back to the mother ship. You continue to need to have access to everything that is in the big company. You continue to need the senior management support and funding and help, essentially, to get through the process. And then ultimately, [there is a need] to get a product to market, that new great innovative thing is eventually going to have to click back into the process to get through engineering and manufacturing, and the supply chain.

What happened in the past is, oftentimes they would get left in the garage alone. And then somebody would come back two years later and say, "What have you done for me lately?" Now, there's the realization that they need connections back into the organization and it's when they're more tethered in that it's more helpful. The same has been true for incubators. In the past,

with old school incubators, you wrote a check and they were off doing their thing. And then if it worked out, you basically had rights to license the technology and the bring people back. Now, it's usually a much more collaborative — so, it's almost like a joint project type incubator.

Knowledge@Wharton: That ties into the idea of a lack of collaboration. If you leave them off on their own ... the marketing folks are going to say, "That's a great spaceship you've built but there's only one customer and if they don't want it, we're in trouble here."

Wagner: Yes. The other thing that's important is most people think about cross-functionals — cross-functional within the technical lines or the engineering lines or the manufacturing. Cross-functional is really everybody. It's the deep customer-discovery people with the science and technology people with the marketing people and the sales people, and supply chain and manufacturing. It is truly cross-functional. It's all of the functions of the company. And oftentimes the HR person is the most important part because as you think about spooling this thing up, finding the right talent is non-trivial.

Knowledge@Wharton: What else is it important to know about radical innovation that we haven't covered?

Wagner: It's exciting! I think the most important thing is that it is something to embrace, not be afraid of. It is something that should be managed and controlled, but in a way that allows the organization to learn, as opposed to in a way that squelches things. And if you have kind of two paths — and there are many different ways to make that happen — you can do it successfully.



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