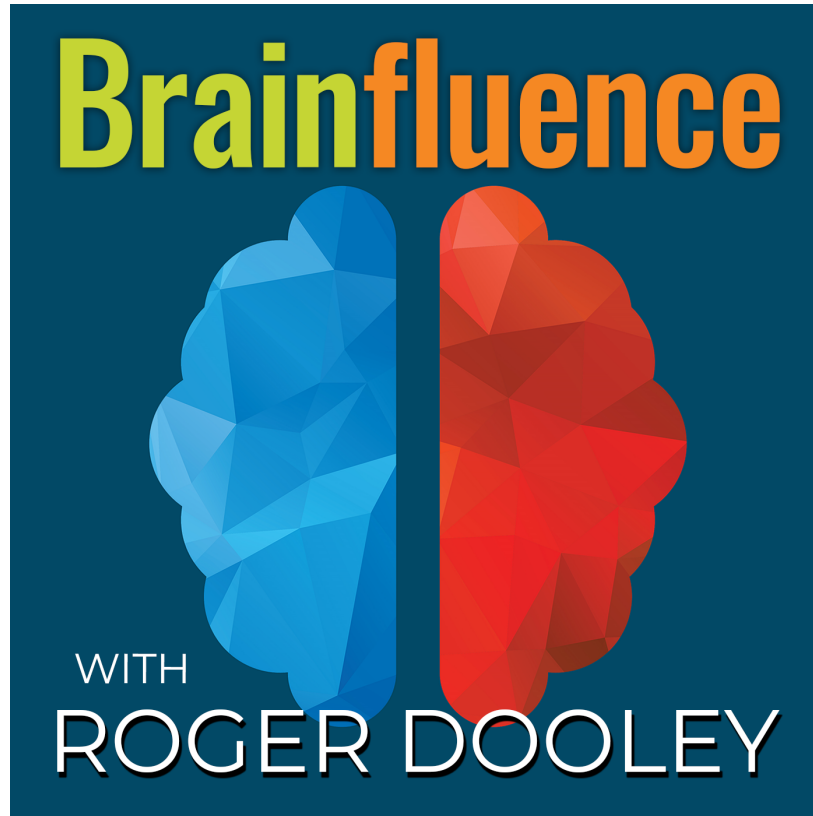


How Customer Experience Can Drive R&D with Ray Iveson

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Full Episode Transcript

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Roger Dooley

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Welcome to Brainfluence, where author and international keynote speaker Roger Dooley has weekly conversations with thought leaders and world class experts. Every episode shows you how to improve your business with advice based on science or data.

Roger's new book, *Friction*, is published by McGraw Hill and is now available at Amazon, Barnes & Noble, and bookstores everywhere. Dr Robert Cialdini described the book as, "Blinding insight," and Nobel winner Dr. Richard Claimer said, "Reading Friction will arm any manager with a mental can of WD40."

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Now, here's Roger.

Roger Dooley: Welcome to Brainfluence. I'm Roger Dooley. We often talk about product development and customer experience here, but usually from a marketing perspective. Today, we're going to look at these topics from a different perspective. Ray Iveson has spent most of his career in research and development. He got his start as a biomedical engineer at Proctor & Gamble. More the 20 years later, he was a senior research fellow there. He then joined Duracell where he served in multiple senior R&D and quality roles, especially has been developing measurement systems for biophysical, electrical, and biometric properties related to product and efficacy. And relating these measures to customer experience and customer perception. Ray's the inventor or co-inventor or more than 70 novel and proprietary measurement

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systems, technical methods, software systems, and consumer perception models. Welcome to the show Ray.

Ray Iveson: Thank you, Roger. Happy to be here.

Roger Dooley: So Ray, from your very earliest days it seems, you were trained as an engineer, but you were working specifically at P&G on measurement systems of various kinds. And so you've really sort of turned into the measurement guy. Explain how the work that you do fits into the bigger corporate picture of marketing, and customer experience and how products are developed.

Ray Iveson: Yeah. So when I started with Proctor, I was brought in simply as an engineer software guy, hardware guy, just building instruments to measure our product efficacy on skin, and hair and other substrates. But as I was doing that work, I was finding that how consumers responded to the products was just as important to ultimately the product development cycle as the quantitative measurements that we were making. So I think a lot of business units traditionally use just the objective measurements to determine whether or not their products meet the need of the consumer. But what I determined early on in Proctor is that you needed to be able to measure the consumer response, not just explicitly but implicitly. So we really needed to complete the picture of how the consumer was responding in order to feed that into the product development cycle. And it's something as I've traveled from business unit to business unit, and then to Duracell, I found that not a lot of R&D organizations do, but that has become integral to the way we operate at Duracell.

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Roger Dooley: Interesting. As I recall way back in the good old days, P&G had an objective or metric that any new product had to be 5% better objectively than competitive products. Now I don't know if that is still in place or if that was ever really actually true, but explain that philosophy.

Ray Iveson: Yeah. I'm not even sure. Because I heard the same things when I was at Proctor. I heard the same thing as when I was at Duracell but I'm not sure what the origins of that 5% were. I think it was a nice round figure and folks often kind of drifted towards that number. But again, that number is based on quantitative measurements. So people would say that they would need to provide a 5% better, let's say, moisturization level for a skin moisturizer or performance for a hair care product. But one of the things that I started to do, and this was within hair care and skin care at Proctor & Gamble was to try to relate those quantitative measurements to consumer response. And it was really very early on that I recognized that consumer response does not line up linearly with the quantitative measurements that we make.

And so just saying 5% is not all that meaningful because that 5% might be an extraordinary benefit in some parts of the benefit space. And it might be a meaningless benefit in other parts of the benefit space. So I'm not sure of the origin, but we've changed the way we approach things to really link it to consumer response so that we can quantify what will be meaningful to the consumer rather than just relying on a, kind of like constant metric.

Roger Dooley: Right. From an outsider perspective Ray, I think the 5% never completely made sense to me, even as an

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engineer, I love nice firm numbers. I engineer myself, but how is a shampoo 5% better? I mean, you have to have some kind of metric. Maybe it gets out 5% more oil on the first shampoo or something. But is that really meaningful. 25 years ago, trying to say, okay, we need to measure how the customer is responding to the product, not just whether the product gets your hair a little bit cleaner is important. What kind of methods did you use at that time? And did you get pushback from other people who wanted to keep things purely quantitative? Because I mean, this is played out not just in the field of engineering and product development, it's played out in economics where for years, economists pretty much resisted any element of psychology or any suggestion that consumers or individuals we're not rational actors. But obviously now there has been this revolution in economics and I think too in the marketing space as well. So explain about those early days of trying to measure how customers responded.

Ray Iveson: Yeah. So early on in first attempts, I think we, myself included, we tended to use more traditional means of collecting data from either the consumer or the quantitative data that we would measure. And we would use scales and present those scales to the consumer, and ask about particular attributes for performance, whether it was skin care, hair care products, laundry products, or in this case, batteries, you would ask about their perceived performance, let's say on a 1 to 10 scale, with 1 degree increments in between the numbers. And you would ask about a particular attribute and then you would line up the data on the consumer response with the

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data on the objective response. And that was the traditional way of sort of measuring how our objective responses lined up with consumer. However, when we started to investigate a little bit deeper, going into what was not explicitly being said by the consumer, measuring their physiological response, measuring their degree of stimulation to whatever it is that they were being exposed to. We were finding very quickly that there was a non-linear response on that 1 to 10 scale.

So for instance, the difference between a product that performed between two and three was not the same as a product that delivered between a four and five change on that same scale. So really this opened our eyes to really trying to understand implicitly what the consumer was not telling us on a scorecard, what we needed to understand in terms of delivering product benefits to that consumer. We needed to understand the non-linearity of that scale and we needed to understand aspects of their response that they were not necessarily telling us. And what I mean by that is when you ask consumers about products, they generally reflect back what they've been told. So if I tell you that a shampoo cleans your hair and it gets rid of oil, and I ask them how the shampoo performed, that's what they're going to tell me.

But there may be other aspects of performance that simply don't show up in their words. And those are the pieces that we're really interested in measuring implicitly to complete the picture of consumer response. And that's why we've moved into the area ... Not that we're replacing explicit measurement or objective measures, but we now

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compliment them with implicit measures to make sure that we get a more complete picture.

Roger Dooley: Well it strikes me Ray, that whether you're talking about haircare products or batteries, often the consumer doesn't have a really good feel for the objective performance of the product. Like I use a shampoo very frequently and I don't know if one shampoo is a little bit more effective than another. I mean, they all seem to get my hair clean if I use them once or twice, rinse and repeat. And I guess my criteria. Do I like the smell of this thing? Does it smell good? Does it smell like a shampoo that a guy might use or is it all flowers and perfumy? What does it look like maybe too? Does the appearance seem consistent with the aroma? And those have nothing to do at all with the performance, but probably those are more salient to the typical consumer.

Now there are probably some people who are really into beauty and such who will make those fine gradations. I think there are probably lots of these other factors, even the packaging of the product makes a difference. I find that my complaints with some of these consumer like health and beauty products have more to do with the packaging than with the product itself, which seems to me, almost interchangeable.

Ray Iveson: Yeah. And I think it's really trying to figure out what, because it's very rare that it's a single benefit that really will allow you to develop the best product for a consumer. And it's figuring out what those, and I'm an engineer, and I've been working in this area of trying to understand consumer response for a long time. And generally

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speaking, you will need to identify 2 to 4 vectors of performance that will give you 90% of the response you're looking for from a consumer. But identifying those two to four vectors is the hard part. Really understanding what levels of contribution you need from those two to four vectors to get the best or optimal response from a consumer is what's really difficult.

Now in the battery industry, it has for a very long time then about battery longevity. Well, when I moved to Duracell, we started to explore other vectors of benefit. So starting to look at not necessarily just the battery, but the battery, that's not what the consumer is exposed to. What they're really exposed to is the device that is run by the battery. So when we started to look at device performance and what really the consumer wants from that device performance, that allowed us to identify a second vector of benefit that had long been ignored, not on purpose, but because the consumer never spoke to it, it was never really addressed by the industry. We identified early on an insight there that we built into a hypothesis and then built that into a product development cycle, that allowed us to identify a vector of performance that really previously had not been worked against in this industry.

Roger Dooley: Well Ray, I guess two things. I'd like you clarify maybe some device performance specifics, like how does a consumer understand that? I mean, to me, the big performance difference between batteries is longevity. At the same time, I, as a consumer really don't have a good metric for that when I'm putting them in say a TV remote, where they should last for months and months. I'm not

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keeping a log of whether it lasted three months or five months, even though that would be a very significant difference between products. I just know that, okay, once in a while, I've got to replace the batteries, and as long as they don't leak all over my device and destroy it, that I'm happy enough with it, or if they require exceptionally frequent replacement.

So I mean this is a key performance characteristic, but in most consumer situations, they don't have a means of really appreciating whether 1 battery is 10 or 15% better. Now obviously you can make those claims on your package if they're true and tell people that, and they may buy them because of that. But they can't really evaluate those claims themselves, but explain the device performance bit.

Ray Iveson: Yeah, and the example you use is often when I use internally talking to our marketing folks or our product development folks: the remote control. The battery is actually meant to last for a very long time for even up to a year or a year and a half. And you're right. The consumer, it is very difficult for them to understand whether one battery has lasted longer than another. But a lot of devices last much shorter periods of time. And a lot of devices also perform in accordance with the power provided by the battery. So if you can design a battery that provides more power, you can actually get a better performing batteries. This aspect of performance is what had generally been kind of ignored by the industry. They were looking at what lasted longer as opposed to what performed better.

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And there are many devices where you get shorter timeframes where judgment on longer lasting batteries will be far better from a consumer. So if you think about flashlights or you think about battery operated trimmers, the types of devices where the battery doesn't last for months and months, it might only last for less than a month. And those are the types of devices where you can get not only device performance differences, but longevity differences. And so that allows the consumer, it gives them a timeframe for which we can get quality data from them to understand what they really desire in their battery, and really in their device. I'm sorry. It's really, it's really their device, but that's provided by the battery.

Roger Dooley: Sure. And as one example, I have a chainsaw, small light duty chainsaw on a pole that I use around the house, and that is battery operated, which even a few years ago, you would not have expected a battery operated chainsaw to be a real product or an effective product anyway. But this actually works very well and not like a big old Husqvarna 16 incher or something, but it's fine. And I think in those situations battery life is important. Although often too, in those kinds of products, the batteries are supplied by the manufacturer and so there perhaps, the battery company is not selling directly to the consumer in consumer packaging, but selling to somebody else and the intermediary or the manufacturer of the product. I think one consumer example that comes to mind is cameras, where I recall when I was using disposable batteries in my various types of cameras. There, difference between battery types and brands was very evident because you might just get half a day or a day of shooting if you're

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really using it intensively. So in those cases, you could really tell the difference in longevity.

So Ray, you talked about understanding consumer insights. Explain how you've transitioned. I suppose, that in your early days you were using things like focus groups or surveys, or sort of the classic marketing research methods. But what are some of the more recent and interesting ways perhaps that you have used to measure consumer feeling about a product consumer perception and customer experience?

Ray Iveson: So again, it's not a replacement for the explicit methods that we currently use. We still continue to use those. But we've moved now to using other platforms that allow us very different measurements. So one of the platforms that we use is a system provided by iMotions. And what they do is they've integrated a number of physiological, and if you will, sort of implicit consumer response measures into one platform. It's all integrated, allows us to do things like eye tracking, pupil size measurement, galvanic skin response, which gets back to my skincare days. And I could explain that if needed. And facial expression. But these are all areas that the consumer will not explicitly tell you about their response. But this data helps to complete our picture of how consumers respond to device performance. So getting back to what I said at the beginning of our conversation, we know that consumers will not linearly respond to a lot of different things, color, light, and in this case device performance.

So what we've done is use these implicit measures to understand where these non-linearities are and where in

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essence, the optimal performance for devices is. And then used that information to feed back into our product development cycle. And the way we did this is we actually provided inputs to the devices that could not be achieved by products in the current marketplace. So we wanted to look beyond what the current marketplace was really to complete our hypothesis.

And when we did that, we found that device performance was perceived to be optimal in areas that could not be delivered against, by current products in the marketplace. So that finding alone made us rethink everything we do about our outgoing battery development cycle. So we took that information, fed it into our product development cycle, developed very different batteries, took same technology and tweaked it, not just to a small degree, but to a large degree, to really produce a different effect for the consumer. And when we did that and then tested it with the consumer in a blinded context. So we went back to the consumer and blind tested those batteries, the consumer told us very clearly that they could perceive the difference in performance from this new design that we never would have landed on by traditional means. But only because of the combination of explicit and implicit data that we pulled from the consumer.

Roger Dooley: Ray, how do you set up these implicit tests? Because like typically somebody using an iMotion suite of tools would have the people or consumers or subjects watch a TV commercial, or perhaps three versions of a TV commercial, and see how they responded to each one. But when you're dealing with a physical product that

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performs over a period of time, somewhat complex ways perhaps, how do you set that up?

Ray Iveson: Yeah. So the control aspect all goes to how long you give folks to deal with the devices. So what we're describing now is all of our internal laboratory work. We don't use these tools in people's homes. We use these tools in our internal laboratories where we can control the exposure time to devices, and we can control the level of performance of those devices. But you can run the iMotion tools in parallel with that exposure and they're really non-invasive tools. So pupil measurement, eye tracking, facial expression analysis are non-invasive completely. We're just using video and or infrared to measure those aspects. You may need a small device attached to the hand to look at GSR, but we can run these measurements in parallel to their experience with the various devices for a period of time, and then integrate and line up exactly when we've dialed in greater or lesser performance to the device, to the change in their physiological response.

And it's really using that capability of the system that allowed us to go back into the data, to identify where consumers perceived the optimal performance of things like flashlights. If you think about flashlights, our eyes adjust to lighting, we know that. So measuring pupil size is very important to seeing how people respond to flashlight performance. And so we know how much of a change in flashlight performance will actually tweak a physiological response for the consumer.

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Roger Dooley: Well, what are the metrics for flashlight performance? I mean, beyond obviously the battery lasting for a while. Is it a brightness or is it what else is in there that you could tweak and measure?

Ray Iveson: Yeah, so objectively we can measure a number of different things. You can measure the intensity of the light coming out of this flashlight. And there are many flashlights where that intensity does not change regardless of the battery that you have in there. But there are many where it does change. So measuring that intensity of light being output from the flashlight is one of the objective measures that we can use. Measuring how wide the flashlight beam is, is another measure that we could use. But we'll typically integrate the total light coming out of a flashlight to really objectively measure the performance of that flashlight. And when you're using a consumer, we'll shine that flashlight into an area where we ask the consumer to look and we'll measure their pupil size change in order to gauge how that flashlight intensity has changed their physiological response to the flashlight.

Roger Dooley: And do these with like multiple devices in tandem? Like here's flashlight A, here's flashlight B to see how they compare? Because it seems like humans are pretty adaptable. In other words, put me in a dark room with a flashlight, I probably won't be able to tell the difference at even different times from flashlights where one is 25% brighter, just simply because our eyes adapt and we adapt to whatever the situation is. Or do you have some other way of kind of showing that okay, it is in fact, this level of brightness that produces the best consumer response?

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Ray Iveson: Yeah. So you put on something that I was told when I joined Duracell, I was told by every single person in research and development exactly what you just said, which is that they did not believe that consumers could perceive relatively small changes in flashlight performance, or really a lot of different devices and how they performed. So we went into the lab within a year or so, we went into the lab to see if we could either confirm or deny that hypothesis. Because there was no data to really show us that. And what we found really shocked us. So we found out that very small changes in device performance, including flashlights could be perceived by the consumer. So this was something that we determined and really to levels of, of let's say, power delivery from the battery that no one could imagine could be picked up by the consumer to very small levels of difference. But when we ran these studies with somewhere between 30 and 100 people, it was very, very clear that people could perceive on average, the difference in device performance, across a wide range of devices.

So given this fact, this was of course, shocking to the R&D organization, but shocking that people could perceive at such small levels of difference. But this really was the stimulus for the work that we did in changing the way we do product development. Because if people can perceive relatively small differences, we felt that going after device performance, that really identified that second vector that I talked about earlier, a second vector of battery performance, really translating through the device. That really goes beyond just looking at longevity, and could we produce a battery that worked against this

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vector, but also would end up being perceived as better performing by the consumer, because it could be that people perceive different device performance, and then you build a battery to perform better in the device. And at the end of the day, they don't care. All they care about is longevity. So that was also part of what we had to prove out. But when we do this, we find that our batteries that perform better for both performance and longevity actually get perceived as better performing by the consumer in blind testing?

Roger Dooley: Does this kind of finding motivate you to want to move into the device business itself, and make sure that the optimized battery is paired with an optimized device?

Ray Iveson: Yeah, we actually work quite a bit with device manufacturers. So we talked to them about this insight quite a bit to help them understand what they need to do from a device design standpoint. One of the things that that is kind of the nature of the beast, if you will, is that device variability is quite high, but if you buy a particular flashlight and I buy a particular flashlight, while they may operate differently in the absolute, what I'm going to judge is the particular flashlight that I have. So even though there may be variability between the two, I'm going to judge it based on how my flashlight performs. So getting a battery that performs well across the variation that's built into devices is what's important. But yes, we share with the device manufacturers much in many of the insights that we've developed, to help them drive towards either less variability across the devices that they produce, or to help them understand where they can produce optimal performance for the consumer.

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Roger Dooley: That makes, I think a lot of sense, and I'm sure that, while be interesting to get into those peripheral businesses, if really your core expertise is in batteries, and you've got other people who make devices partnering with them makes it makes a lot of sense. I guess that that was a significant surprise that people could tell the difference. It surprised me, at least I'm glad that I was in good company with everybody else in your R&D department within that belief. I'm curious Ray, are there any other surprising things that have come out of your research where you didn't see it coming or nobody saw it coming?

Ray Iveson: I mean, I think I've hit on the main things that were most shocking to us. First, the ability of the consumer to perceive very small device performance differences, for sure. But then also the piece that I hinted at, which is really the non-linearity of that consumer response and figuring out where that optimal device performance is. Because if you use sort of the linear scales that are traditional in this explicit type of work, you may not be targeting the right area for performance. And that goes beyond batteries. That goes to any type of product that you might produce. So really understanding those non-linearities and where optimal performance is, is really is where we've taken our product design cycle.

Because now we start with the consumer, build a fuller picture of how they respond to things, feed that into our product design cycle. And then at the end of it, we come back and we validate with the consumer. So by running blinded test with our consumer, we're validating all those hypotheses and those test designs or product designs that we built in at the end of the cycle, because without it,

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we'd still be going after things that we believe are the right thing, whereas the consumer might not feed back that way. But having that last piece of work, that validates with the consumer and seeing that we could get blind test winners for batteries, another shocking sort of surprise if you will, for the industry. Because we know that consumer work had been done for a number of years, but the fact that we can produce blind test winners with specific designs going after specific battery performance benefits, that delivers specific device performance benefits, that was another shocking sort of revelation, but helpful for us to validate everything we've done.

Roger Dooley: Ray, do your marketing people come in and want to run some studies using your iMotions equipment, or any of your other tools there? Or do they have their own tools?

Ray Iveson: Absolutely. I think the company as a whole has started to look towards things like eye tracking and other measurements for different parts of the organization. So looking at how we might get the best packaging or displays, those types of things that you're always going to ask for explicit feedback on that. But I think the company as a whole has embraced the idea that you you have to also measure the things that you're not being told in order to really get the complete picture of how to please the consumer.

Roger Dooley: Great. Well, that's probably a pretty good place to wrap up Ray. If people want to find you online, where can they find you?

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Ray Iveson: My LinkedIn site would just simply be my name Ray Iveson. A lot of people put an R in the last name. It's I-V-E-S-O-N. So R-A-Y I-V-E-S-O-N, LinkedIn site. And you can find out more about the work that I've done with Proctor as well as Duracell.

Roger Dooley: Right, I think you're probably the only Ray Iveson that pops up on LinkedIn, but you can always add the term Duracell to refine the search if necessary. So we will link to that LinkedIn profile and any other resources we spoke about on the show notes page at rogerdooley.com/podcast, where we'll have audio, video and text versions of this conversation. Ray, thanks so much for being on the show.

Ray Iveson: Thank you for having me. Pleasure.

Thank you for tuning into this episode of Brainfluence. To find more episodes like this one, and to access all of Roger's online writing and resources, the best starting point is RogerDooley.com.

And remember, Roger's new book, *Friction*, is now available at Amazon, Barnes and Noble, and book sellers everywhere. Bestselling author Dan Pink calls it, "An important read," and Wharton Professor Dr. Joana Berger said, "You'll understand Friction's power and how to harness it."

For more information or for links to Amazon and other sellers, go to RogerDooley.com/Friction.

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