



## Connect and develop - an interview with Roy Sandbach, research fellow, Procter and Gamble

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Managing Innovation

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# Transcript of the interview

Roy Sandbach interview

Speaker key

JO= John

RS = Roy Sandbach

JO Well, I have here with me Roy Sandbach, who's with Procter & Gamble, he works very much, and has worked for a long time in the area of innovation, but with a rather interesting job title for a, an organisation who's very much about products. Roy's a research fellow. Roy, I wonder if you could perhaps begin by explaining what a research fellow is and what he does inside an organisation like P&G?

RS Yeah, sure. About 15 years ago Procter & Gamble decided that it was appropriate to identify and provide an opportunity for them to continue to work with . a group of people within research and development, who had skills that were appropriate to innovation, but which would be reduced in impact, or, indeed, that they would not use, they wouldn't use them at all if they stayed within the research and development management community. As a consequence, P&G, like many companies, put in place a dual-career track system within research and development, and at that time I was offered the opportunity to stay as a working technologist, upstream product developer. I have a lot of interest in new product visions and prototyping, and I was offered the opportunity to do that work, rather than manage significant projects with a large number of people taking the project from establishment through to the market place.

As a percentage, we are probably about 10% to 15% of the total R&D organisation in P&G. R&D is about 8,000 people, so that's about 800 in total. And, as a consequence of identifying those people, obviously it was necessary for P&G to create a job content and a job structure which, within which those people could flourish. Now, P&G didn't really do that; the individuals themselves started to do that, and I was one of them. And to all intents and purposes, my job structure is really quite straightforward: I work with, I work in a sense of client and supplying. My clients are the businesses and I am the supplier of innovative, new product development thinking, whether it's chemistry, physics, design or whatever. And I spend approximately 40% of my time working with the biggest business issues that Procter & Gamble faces. Usually they're consumer-facing issues, but they can just as easily be technology-facing issues, or, indeed, market-facing issues. Another 40% of my time I apply to what I call stuff no one else does. [chuckling]

There are quite a number of... I do a lot of detective work, I examine opportunities within the business unit I operate in to do new things, to challenge existing processes, to answer what-if questions; what-if questions like, what if in five years' time we were regulated out of oil based surfactants, what would we do? You might think there are an awful lot of people who think about those questions in a large in organisation like Procter & Gamble, and there are some, but they don't always that the kind of connections that are, that a research fellow might have. They don't always necessarily think as broadly as a research fellow might think. So I spend about 40% of my time doing stuff which no one else would do. And then finally, I spend about 20% of my time essentially teaching, teaching...

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The organisation, the R&D organisation in Procter & Gamble probably has an average age of less than 30, which is a remarkable thing, really. As a consequence, we've got to bridge from old knowledge to new knowledge as well as we can, and you can't just do that through a computer, you've often got to do it through people, and so as a consequence I spend about 20% of my time doing that. So I'm a supplier of capability; in broad terms, I deal with some of the toughest product and consumer-related problems that Procter & Gamble has. As a supplier of capability, I look for new things, and I teach. And I think I'm fairly typical of research fellows in the organisation. There are about, I'm not sure exactly of how many there are, but there are about 100 altogether, there're relatively few in Europe, but that's simply because of the organisation [unclear]. I am a chemist by training, in fact, I did chemistry here at Imperial College, but over the past few years, I've become more and more interested in the boundaries between science, engineering, design and art, because in the end, it's my belief that the biggest innovations in product-orientated businesses happen at those boundaries, and I think I'll come onto that a little bit later. So...

JO That's very interesting, not least because it's an evolving job description, but it's also one that places emphasis on making connections inside a large organisation.....We've heard a lot about Procter & Gamble and their new mantra of connect and develop. It's all very well to say open innovation, not all the smart guys work for us, we need to connect things up. That's the easy thing. How you actually make it happen seems to be the challenge. I wonder if you could talk a little bit about how P&G is actually dealing with this on the ground.

RS Yeah, sure. I think, as well, it's entirely possible to put in place a structure which we call connect and develop, which the academic world calls open innovation, but if you simply say to an organisation like the R&D organisation in Procter & Gamble, you will now do open innovation, then, frankly, not a lot would change. Because, whether we like it or not, large multi-nationals with a well-defined product range with a need to support brands, they tend to have a bureaucracy which, you know, responds in a rather controlled manner. So, the first step, I think, is to have a clear top-down direction that gives us some targets, we're big on targets. In fact, the clearer the targets, the more, the more likely we are to concentrate the mind and put in place ways to achieve it.

So several years ago our chief executive officer, Mr Lafley, essentially gave us a clear direction that we would achieve 50% of new ideas into the business from external sources. I think he gave us a timescale, but it was essentially, do it quick, guys; the principle being that if we could bring the core competencies of Procter & Gamble to bear on any ideas, internal or external, then we would be able to make money. So he gave us that guidance. The second thing that he did, and I think it's really important that this is shared throughout product development in or an innovation organisation, is that he made absolutely sure that we all understood what Procter & Gamble is about. Now, it is a fact that in many organisations the people at the working levels don't fully understand what their organisation is really about.

In the end with P&G it's about brand equity; it's about ensuring consumer satisfaction and superior consumer satisfaction; it's about delivering new product developments that create a very, very strong and sustained impression of the brands. It's the brands that count. And so as well as telling us what our task was, he and, indeed, the rest of the senior management, made it very clear to us the context within which our task needed to be executed. So if we did go outside to look at new opportunities, we could almost always make a very early assessment to whether they were appropriate to Procter & Gamble or not, whether they fitted our business strategy.

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And here, you know, you'd think that that would apply predominantly to the marketing community, you know, but no, our whole R&D organisation, in my opinion, is very clear on what we are about as a company. And so, as a consequence, when we do fish and examine the pool of ideas that exist externally, or indeed internally, we make very early judgements on whether they're appropriate to Procter & Gamble's strategic direction. Even the junior managers in R&D have a fairly well developed sense of what's right for us, which I think is good. It's actually one of the reasons why we have in the end been successful. So it's putting in place a clear direction and then ensuring that the people who are in the organisation, looking for new things, understand what they're looking for. And they're not just wandering around saying, have you got something for us guys?

I think the other thing is that we have in place a series of systems. Let me give you a couple of examples. One example is we have a series of internal organisations, which are essentially communities in practice with a special, each of which has a special focus on some cross-business technology area. So, for example, it might be fabrics and fibres, it could be analytical chemistry, it could be organic chemistry, it could be packaging. And what this helps to do is to ensure that we have a connected process across business units. Many very large companies have business units which operate in a very silo'd manner, and so we have a structure which attempts to avoid that.

The other system we have is a system which we call technology entrepreneurs. Now we have about 80 people in the organisation, which is not a small number, whose responsibility it is to identify where gaps are in our existing delivery of technology or delivery of product, product performance, and to actively search for ways to fill those gaps externally. So that's a second system. I'll give you another one. There are quite a number of technology broker organisations externally that we use quite a bit. We use people like InnoCentive, people like NineSigma, as ways in which to approach a very broad range of external potential problem-solvers. And that's just three; I mean, I could give you plenty more structures that relate to the ways in which we...

JO So it's not just the words, there's actually a lot of structure and system underneath that.

RS Yeah. There's a top-down guidance on what we need to achieve; there's a, you know, significant understanding of the areas in which we need to play; and then there are some important internal systems which help us to do the connected developing. So, now, I think you asked also about challenges? Yeah.

JO Yes. I mean, just thinking about the... Well, I think you said once, Procter & Gamble's got some serious growth challenges... Because it's such a large organisation. But in an environment which is extremely turbulent, how does it achieve that? Where are these innovation challenges?

RS Well, the, I think the... There are two challenges with respect to open innovation which remain... It's not rocket science, and they remain, in my opinion, work in progress. The first challenge is the big guy, little guy challenge. Many ideas, particularly disruptive ideas, will tend to come from sources which are small compared to P&G, and we need to encourage those people to come to us with their ideas, and therefore we need to have a very sophisticated intellectual property plan, and we need to make sure that they come to us and talk to the people who they can feel comfortable with. So we do have a connect and develop organisation which is the first point of call for people with ideas that might be appropriate for our company.

Nevertheless, you know, we've had examples and we continue to have examples where our response can be slow because we're much bigger and more complex decision-making organisation than many small

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companies, so, as a consequence, they don't understand that necessarily. And then secondly, of course, we have the old issues of owning ideas and ensuring that whoever comes to us is suitably protected and understands the risks that might exist for sharing ideas with people like us. That big guy, little guy issue, we are much, much better at now than we ever have been, and, indeed, we've got some great examples.

The Olay technology, based on peptides, essentially came from a small French company called Sigenta, who we saw first at a conference, and that by itself, I mean, 20 years ago we would not have been at conferences. And we worked up that technology with them, we've worked with them extensively over the past few years, and they're a relatively small company, we're a very, very large company, but the relationships has been, certainly successful enough to make a big difference to the Olay business.

In addition, the Spinbrush example, the Crest Spinbrush is quite a good one. Some entrepreneurs in the US came to us with the idea to put a small rotating motor into a toothbrush at relatively low cost, a perfect example of a disruptive innovation, as defined by Christensen [?], and they indeed, some of them came to work inside Procter & Gamble for 18 months. So, you know, we've had, you know, essentially individual innovators coming to work inside P&G. Nevertheless, it remains work in progress. I think the second issue is particularly the case now, in today's turbulent economic times, and that is that we are very, very careful about ensuring that the work that we do is well focussed on the needs of the business. And that tends not to leave very many gaps for novelty. So if somebody comes with an idea to us which might require some exploratory work, it's sometimes even difficult to find time and energy and people and money to just do that little bit of exploratory work which would tell us whether the idea is a good one or not.

I don't think there's an easy solution to that either. Very fortunately, the company has put in place a small amount of funding opportunity for research fellows like myself to go and ask for \$25 to \$100,000 of initial funding to examine new ideas. But it's not the easiest thing in the world to pick up, to find any slack in the system. I think that's the way to describe it. It's difficult to find slack in the system. So I think those are the two open innovation challenges which are most critical to Procter & Gamble, looking ahead. By the way, we have over 50% of our recent business initiatives are externally.

JO Really? So you've actually exceeded the target?

RS Oh, yeah, yeah. I don't know the exact number, but I know it's over 50%. If you read Mr Lafley's book, The Game Changer, it's in there. So there is, you know, scope for real clarity on the big guy, little guy issue, and there is scope to enhance our opportunities to fit new idea, exploratory work into our existing programmes. They remain the two biggest open innovation challenges. So... Right.

JO I guess one last question, then, really, P&G's an organisation which has been working hard for many, many years to innovate and continue to innovate, and that comes through, as you've just described, updating, upgrading its capability. If we think about managing innovation more generally, lessons for any kind of business, public or private sector, what sort of lessons, if I could you, a possible question, distil your experience, your wisdom, your understanding of the innovation management challenge as you've learned it in P&G? What sort of messages might come out?

RS Right. Let me think about this. What I'm going to do, John, is I'm going to talk about two areas, which you probably won't yet see addressed fully in the academic... If you had to pick up a book on managing

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innovation, and you'll read quite a lot of really, really useful stuff about putting in place structures for innovation, and, to a degree, something about the climate for innovation. But there are two areas that I think organisations might want to ask themselves some questions on. The first one is, do you, do we know what Lotka's Law is.

JO Lotka's Law? I don't, so perhaps you could explain

RS Right. Well, let me tell you that if you look at publications in the scientific literature, R&D patents, or indeed almost anything which involves producing new stuff, you find that there is, for 100 publications, generally speaking, very, very few people have produced the majority of those publications, and often 20% of people produce 80% of the publications ..... Now Lotka, in fact, did an analysis of that in the context of both publications and patents and he found it was an inverse square law. Now, what that means, in the area of innovation, is that we really should examine whether in very large organisations there are just a few people who we could call serial innovators, who consistently come up with significant game-changing ideas.

Oh, I should say, by the way, that one of my preconceptions, and no one will convince me otherwise, is that, that the great ideas come from connections made inside an individual's head. Ideas can be developed by groups, but the original idea happens, that flash comes in somebody's head, through knowledge and connections. So the question is, in organisations, who are your serial innovators? Now, I don't think very many organisations have examined that question to, with any rigorousness. Many think that innovation is the job of everybody, and I am not sure about that. Many have no idea about Lotka's Law and have never examined their innovative capability through the eyes of serial innovation. And I think that if we could do that, we'd... Because those people need to be nurtured, and if you, you can't nurture them if you don't know who they are. You can't give them extra bits of money; you can't give them extra flexibility.

Now, P&G has a technical career track, which might be dealing with that, but it's inadvertently dealing with it. It's not knowingly dealing with it. So the question is, serial innovators: have you got any in your organisation? If you have, then what are you doing to nurture them?

The second area of innovation management challenge, which, and I'm sure that you would know that, you know, being at the leading edge of, of this, is critically important, is the question of multi-disciplinary innovation. We are pretty much at the end of the road in many areas of product development, with respect to the application of science, by itself, as a route to new product development. Companies which have depended almost exclusively on chemistry as the basis for new product development will, in the future, have to go into other areas of technical development in order to deliver significant consumer improvements.

That means working at the boundaries between, and I'll give you four areas: straightforward science; engineering, and those two commonly do work together; design, because I don't think people fully understand the power of design in the context of new product development, in any context, whether it's B to B, or B to C, it doesn't really matter; and, thirdly, art, where the learning from artistic practitioners and the enhancement of consumer and client response through, through artistic processes, as opposed to scientific processes and straightforward functional performance, I think there are huge opportunities to build at the boundaries.

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Now, in order to build at the boundaries you have to get scientists who understand design; you have to get designers who understand science; you've got to get the occasional artist who is prepared to come and talk to Procter & Gamble; you've got to get scientists who go and sit in art schools occasionally and read art-books or listen to the way in which music is responded to. But you've got to have people in multi-disciplinary position, mental position, if you like. And I don't think we do that as well as we could. So, serial innovators, who are they? And multi-disciplinary innovators, do we have any? These are the two questions which are the source of, I think, major challenge for managing innovation.

JO That's absolutely fascinating, and in some ways it flags forward, it's not just connect and develop, as is experienced so far, it's actually pushing the frontiers of how we think about the innovation challenge.

RS Sure, sure it is, without question. In both those areas, you know.

JO Lovely, that's been really great. Thanks ever so much, Roy.

RS You're welcome, John.