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Design thinking, the driver of innovation in Irish Industry

An interview with Denis Hayes, Managing Director of the IRDG

Government has awoken to the power of design for business, large, medium and small. The country has made great progress from 1960's Ireland, when the government last played a significant role in the design sector. Today, design has achieved strategic importance. It is now recognised as a key enabler of innovation, an effective agent for organisational change and a process for delivering positive customer experience. The government of 2018 recognise design on par with STEM disciplines (Science, Technology, Engineering and Maths) and has more recently written it into future policy ambitions with the 2017 publication, *'Winning by Design'*.

In this interview, Martin Ryan and Trevor Vaugh step outside the design community for an external perspective offered by a pillar of Irish industry, Denis Hayes - MD of IRDG (Industry Research & Development Group). Representing a network of over 250 companies involved in Research, Development and Innovation (RD&I) across all industry sectors, the IRDG are an important part of the current and future industry growth and ambition and provide a litmus test for the progress of design thinking in industry.

How would you describe the IRDG membership?

We have member companies across all the sectors from medical devices, pharma, software, financial services, engineering, food & beverage, construction, consumer products etc. Approximately 40% are multinationals and 60% are indigenous. What ties them all together is the fact that they are all involved in research and innovation and are keen to push that agenda forward.

Specifically there are two types of members - subsidiaries of foreign organisations and indigenous companies. 25% of the membership are in software and services, 20% are in health care, with the balance made up between engineering, food & beverage, education and more. They all have innovation agendas but are at different stages of development. Some have a long history in R&D and are very well structured, others less so. Some have 5 people working for them, others have 5000. It's very diverse and it's that very diversity that is one of our strengths. We are bringing together people from a multitude

of backgrounds, all with different strengths, operating across many different sectors. For innovation, diversity is very important. It is often at the intersection of industry sectors that the next innovation is likely to happen.

Drawing On The Past

You started a technical career with Cadburys, progressing from there to Waterford Foods, Glanbia, Heinz and finally Bulmer's, spending 10 years as Innovation and Technical Director. During this time, how did you view design services and practice in terms of delivering real value? Which, if any, design services or practice did you employ?

I would always have been very conscious of engineering design. I worked in the fast moving consumer goods sector. Packaging and engineering design would have been part and parcel of developing new products and processes throughout my career. Design services were part of innovation in so far as everything from engineering to graphics to packaging would all have been very important. However, it is only in recent years

ABOUT IRDG

The IRDG network represents companies involved in research and innovation across all sectors of industry. In addition, the majority of the third level research units within the colleges and institutes of technology are also members. IRDG formed 26 years ago as a representative group, an advisory group and an innovation network to support its members. It works across 5 pillars; Representation, Funding & Support, Innovation Networking, Collaboration and Learning. In doing so, IRDG acts as the voice of industry RD&I in Ireland, supports members to avail of relevant funding opportunities for innovation, brings companies together to share learning and experiences, promotes collaboration between industry partners and the third level sector and facilitates best practice learning and innovation capability in organisations. This is where the likes of Lean Product Development and Design Thinking fit in.

that design as an influence on business processes entered my consciousness.

So when you joined the IRDG In December 2011 as Managing Director, this influence clearly developed or did it change how you see design?

My own epiphany came about 5 years ago when in Australia. I was attending the annual conference of an organisation somewhat similar to the IRDG, called the Hargraves Institute. They had their annual conference in Sydney. What opened my eyes was the most dominant theme - Design Thinking. In attendance at that conference were manufacturers, insurance companies, pharmaceutical companies, all speaking about how they have integrated design thinking. In particular, I met an Englishman called Darrell Mann; Darrell was one of the speakers at the conference, and had been bringing this Design Thinking approach to many leading international companies.

That experience made me realise that design had a whole other dimension to it as in design thinking and that it could be used as a strategic means to stimulate innovation. It was about using the approach and mindset of designers in the innovation process and how it could deliver powerful results.

Soon after coming home from Australia, I started seeking out people who have skills in that area, which consequently led me to Design Innovation Maynooth. Together we worked to design and deliver a programme for our members that would introduce them to this concept. We also dedicated our Annual Conference that year to the subject of Design Thinking. That was 2014 and was the beginning of IRDG's journey with Design Thinking.

How have you developed this theme in IRDG since then?

After meeting him, we invited Darrell Mann to come to Ireland. We decided to dip our toe in the water and pull together the conference. I was very conscious that most of our members were not aware of, or had limited awareness of what design thinking might be, so we felt the best way would be to run a big conference with good speakers from Ireland and abroad and to have a number of case studies. That went down very well and was a big success. It was clear that business recognised the need to increase their capacity for innovation and that a design thinking approach could contribute to that.

From there we decided to build a course tailored for business. That course was a partnership between IRDG and Design Innovation Maynooth and has now trained over 300 people in a series of design thinking masterclasses. These involved formal tuition, a team approach from the company and learning by doing using a business project of their own, and also visiting companies in Ireland who had already been using design thinking in their business.

We have also pioneered Design Thinking Ireland as the annual conference on the subject, and have hosted business enthusiasts and people from the design community every year to connect, learn and share experiences.

Reflecting On The Present

What did your members do before design thinking?

Companies used classic methods. On the one hand, they were doing R&D but for some of them they may not have thought about involving the end user, or the customer, to any great extent. They may not have had the tools or techniques to interact with their customers.

So I would think for a lot of them, particularly the industrial base, it was technology and R&D led. For some of the consumer product companies on the other hand, they would have been using classical market research and outside agencies to conduct market research for them, so some of it worked and some of it didn't.

The demand for innovation in all businesses has increased enormously over the last 5 to 10 years. No business can survive without innovation and I think a lot of companies didn't have, and still don't have, proper structure or processes to start with the end user in mind and develop the concepts that are most likely to wow their customers. Looking at what US companies in particular have done by embracing design thinking, you can clearly see a business case for it and a greater likelihood of success with your innovation efforts.

Why have you chosen design thinking over other innovation processes, for example, over open innovation or the innovation value chain?

Every company has to have an efficiency engine. Companies have to deliver on quality, on cost, on time and the efficiency engine has to work exceptionally well, no matter what size company you are. At the same time, companies need to be innovative - the demands for innovation have never been greater. What design thinking does is provide a framework to create solutions from a user-need perspective and through its process enables designers, managers and CEOs enhance their creative confidence. It allows companies to put a process and structure in place to innovate in a systematic way, that isn't just a linear, pure analytical way that many of the industrial companies would have done in the past. Design thinking doesn't preclude people from taking an open innovation approach. It can be inclusive and it can fit in with other existing processes like stage gate already within a company. And that's the beauty of it, you can build it into what you have, without radical change. But it does force a company to think of WHY and WHO they are developing a product for, getting to know their end user in a much more intimate way than they would have done in the past.

Following this experience, what would you consider the strengths and limitations of

Design Thinking? When would you advise companies to use DT and when to avoid?
If the problem is reasonably straightforward and the parameters are well known, if the past is a good predictor of the future and particularly if there isn't a very strong human element involved, Design Thinking may not be the right approach. However, lots of problems are complex, and the phrase 'wicked problems' is often used. In these situations, there is no definition of what the ideal solution is but there is a need to design a solution that is acceptable. Where you have a strong human element, insufficient data and a lack of understanding, where you might need different inputs from different functions, then Design Thinking is well placed to address the issue.

Do you have any local examples of when it worked very well and when it failed?
There are a lot of companies in Ireland where it has worked well. The one that springs to mind is a company in Kilkenny called Merlyn, they make shower enclosures and are an Irish SME who are now number one in the UK market. Design Thinking has been very much used in developing their total offering to the market, not just their physical product, but all of the service supporting the product which turned out to be one of their differentiators. In particular, they offer excellent spare parts service to their customers in the UK, which is something their competitors do not offer. They used the Design Thinking approach to help them to clearly understand what their customers need, even more interesting when you consider their customers are not necessarily the end users of their products. By successfully using Design Thinking, they have become a significant player in that market. On the other hand, one of the problems with implementing Design Thinking in companies is that there needs to be support in the company at all levels, particularly at senior management. Just giving a set of tools and techniques to middle managers and hoping that is going to deliver results to a company, is in many cases, not going to work. We have seen a number of times where a group of middle managers might have been trained in Design Thinking but when they go back to their companies, the culture of the company in general isn't supporting them and the top management isn't supporting them. Therefore, the training can wither on the vine. It is less a failure of Design Thinking but rather a failure of its implementation.

Why can middle management not succeed in its implementation, even in a small way, without total buy-in?

The problem with innovation is that by its very nature, it is a team sport. It needs people from a variety of functions, obviously from design, R&D, finance and engineering, along with support from HR. Part of the problem is that if you have a small team, they are not going to be the total resource necessary. It needs to fit in to the company culture. Starting from the top there has to be a culture which is able to tolerate a certain amount of ambiguity, an extra amount of work at the front end of innovation, and a certain amount of time and resources that would be normally used in companies. Unless there is at least a critical mass within a company for a new process, there is a high risk that it won't prosper. It doesn't mean that a small team might not be able to apply it in a skunkworks approach, this may work in some cases, but in many applications we have seen it fail. There simply isn't a critical mass of people in the company who understand it and embrace it.

What are the big issues facing IRDG member companies today? Is there anything surprising, something you see but is not well publicised? Which, if any, is the design community well placed to tackle?

As the need to innovate grows there has also been an increase in demand for people with a design background to become involved in that process. A lot of teams who haven't involved designers previously are now doing so. There is a real opportunity for those with the right design mindset and skills to join organisations across all sectors.

A lot of innovation is occurring where people have to deal with new technology, and it's that interface of new technology and their understanding of their customers and users that presents opportunities. People who have those design skills and have an understanding of business and technology are very well placed to add value within companies particularly within the innovation space. Digital transformation is the buzzword that's out there and is impacting virtually every organisation and they are going to have to have an approach to address this. From that point of view, people with a design background have a lot to offer to industry, and that wasn't apparent in the past.

Looking To The Future

Within the professional community of design, there is ongoing debate as to whether Design Thinking is good or bad for the wider design profession. Some describe it as 'design light' and raise concerns that it devalues services provided by professional design firms by presenting design as 'easily attainable' and 'doable by all' after only a short period of training. Others contend it has opened the door for design services to wider industry and see it as positive for the industry. What are your thoughts on this debate?

I don't think there are reasons for people to feel aggrieved or defensive within the design community.

I think the wider business community are now appreciating the way a designer thinks and works. Some of that can be applied through problem solving and business which is a very positive thing. There are certainly roles within business for classically trained designers and there are increasingly numbers of roles for them but I think there are also roles for scientists, engineers, finance people and other analytical thinkers with some design skills who can apply a more creative approach to problem solving.

Equally, I do believe the conversation around Design Thinking has broadened people's understanding about their importance of the overall design of their product or service offering. The look, the feel, the delivery, how well it is meeting their customer or end users' needs and how it measures up against the competition are all important considerations. So I think is it a win-win situation. Design Thinking is not design but it is a process that uses the approach taken by designers and applies it in a creative business scenario. Personally, I think it's all for the good of the business community and should be good for the design community as well.

Having been in a leadership position within a number of companies and more recently worked with many CEOs through the IRDG - what advice would you offer design professionals and the wider design community that would make them more relevant and valuable to Irish industry?

For young graduates coming out of college there are excellent opportunities in industry.

There is an increasing demand from business for people who have design training.

On the other hand, people who have established design careers will be further in demand. Sometimes, the design community can appear more craft orientated and "arty", so maybe there is a marketing job to be done on the part of designers that shows how they add value to the wider business community. There is no doubt that they can. On one level, there are some very specific design capabilities and on the other it can be more of a team effort, like with innovation. In this way, designers can be seen as contributors in driving business forward but it is not an exclusive role of design.

Is there anything I didn't ask you that you would like to speak to?
The term design thinking now has developed a certain currency. While a lot of people may not know what it is, they are still open to it. There is a growing appreciation that this approach has value. There are many very good examples from companies around the world that have used it to great effect. If it hadn't

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been called Design Thinking, it would still have been the latest innovation process.

Author's reflection

A recent PWC report (2017 Innovation Benchmark Report) placed Design Thinking as the second most dominant innovation-operating model in international organisations. 59% of the respondents reported using Design Thinking as the driver of innovation, just below Open Innovation (61%), and surprisingly, well ahead of Traditional R&D (34%). With such a dramatic uptake, often led and carried out by individuals coming from non-design backgrounds, it is easy to imagine why the words *'Design'* and *'Thinking'* used together can draw out strong points of view, especially from the Design community.

Only time will tell if the growth of DT in organisations will lead to the widespread promised return on investment but it is very clear that efforts are likely to fail without company and leadership buy-in, adequate understanding and use of the DT process, and critically, poor design and execution of the resulting projects and initiatives.

This interview sets out the position of the IRDG - a strong proponent of Design Thinking in Irish industry. It establishes how their work and influence are impacting the wider Irish Design industry. Denis Hayes clearly believes that the growth of DT in Irish RD&I organisations should not be seen as a threat to design professions and expertise, but rather a broadening of its reach. Industrialists value the design practitioner, while at the same time, equally recognising the value of Design Thinking when adopted by non-designers as a way of balancing hard analytical thinking with complementary tools, necessary for the challenges and opportunities we face today. We hope this interview opens the conversation further and we thank Denis for his time in talking to us.