
Design Thinking

Q&A With

Palani Palaniappan, EVP, Innovation and Development, Terumo BCT

Generis Group is honored to have Palani Palaniappan, EVP, Innovation and Development at Terumo BCT join the speaker faculty at the upcoming American Medical Device Summit 2016.

With the summit less than a month away, we took the opportunity to sit down with Dr. Palaniappan to gather his insights and discuss the importance of 'Design Thinking' in the journey from concept to commercialization.

About Palani

Palani brings more than 25 years of experience in product and project development, engineering, scientific research, and global business and technology management.

Prior to joining Terumo BCT, Palani was the Vice President of Research and Development at Life Technologies, where he led the Cellular Analysis Division. He has also held leadership positions at GE Healthcare, Amersham Pharmacia Biotech and the University of Rochester.

Palani has contributed to 25 scientific journals and publications throughout his career. He earned his bachelor's degree in agricultural sciences from Annamalai University in Tamil Nadu, India, and his doctorate degree in biological sciences from Northern Illinois University. His post-doctoral research was completed at the University of Rochester, and was focused on the mechanism of human immunodeficiency virus (HIV) replication and reverse transcriptase-mediated drug resistance in HIV.

Palani has global responsibility for the strategic direction and execution of the following for Terumo BCT:

- I&D Project Management Office
- Ideation and New Technology Ventures
- Grants Management
- Quality
- Process Engineering
- Product Development
- Regulatory Affairs
- Scientific and Clinical Affairs

What aspect of the design process do you consider most crucial for success?

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Palani Palaniappan
EVP, Innovation and
Development

Planning. Because a failure to plan is a plan to fail.

Often in a desire to be expeditious, organizations feel compelled to run fast without laying out a plan and end up running in the wrong direction.

If you have heard the expression “speed kills,” it is actually very apt with product development, when speed without planning is a huge detriment. Doing it right requires extraordinary focus on planning.

You need to have a plan for how you generate new ideas, how you evaluate their viability and economic promise, how you ensure it’s an innovation that brings value to the customer and is affordable, and a plan for regulatory approval.

The functional areas of a company must come together, understand what unmet customer needs they are solving for and be brilliant together.

How does “Design Thinking” impact the early stages of development?

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Design thinking—which is a process for creating new and innovative ideas—has a huge impact on the early stages of new product development.

A product concept that fails to meet intended user needs at late stages of product development is very expensive and leads to a very dissatisfied experience for both the developing organization and the intended users and various stakeholders.

The design thinking approach allows for rapid prototyping and testing multiple iterations of a product concept at very early stages of product development. So a frugal innovation approach can take hold, using the philosophy of fail early, fail fast, fail often and fail cheap. That ensures the success of a product right from the get-go.

What are the most common mistakes that companies make in the design process?

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Great ideas often fail because they focus solely on technological solutions rather than thinking of an ecosystem: thinking of a customer need in a given setting. Too much focus on technology can sometimes cause companies to miss elements like Customer Experience—which should be part of every innovation. Gemba ensures innovation constantly goes beyond meeting unmet technology needs, to include innovation in the context of the entire ecosystem of the intended users. I'll talk a lot more about gemba at the conference.

Additionally, we need to be in constant touch with intended users throughout the development process to ensure that the intended product is meeting their needs and experience. We can't just listen to customers—we have to go beyond. To create disruptive innovation, we have to truly understand their pain points, where they have unmet needs.

Think about a water bottle, for example—the need is to quench thirst on the go. And you can carry clean water to drink in any number of containers. But now, for sports or active people, we have insulated, BPA-free, spill-proof containers that you can open with one hand, even while running or riding a bike. Some of these bottles have a feature that allows you to mist yourself with water. These ideas didn't come from the fact that we all get thirsty. They came from a deeper understanding of what a product could be and could do, and now even something as simple as a water bottle can deliver an experience that meets a need you may not have even considered.

This approach, of watching a customer use your product, asking questions about how and why they are doing things, takes you beyond functionality and even beyond usability to the experience of using and interacting with a product.

How do you successfully foster a culture of innovation within your teams?

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First let us define innovation. I want to make the distinction between invention and innovation: Invention is not equal to Innovation. Invention or ideation precedes innovation. Not all inventions translate to innovation.

Foremost, we encourage a culture of invention or creativity: a spark of ideas or unlimited funnel of ideas, what if we could do this, the nature of unmet needs.

However, innovation is the translation of ideas into to practical use by a large number of intended end users in an affordable and accessible way.

For example, I would like to go to the moon—I imagine that would be an incredible experience, and it was reported in August that the U.S. Government gave permission to a private company to fly there. But we are a long way from vacations on the moon—it's a great idea, but there are regulations and price constraints to tackle before we start packing our bags. Maybe this is coming; but for now there is a practical limitation to the audience and affordability.

So innovation is invention that meets an unmet need, in an economically viable way.

How can you ensure that the new products you're developing will meet the regulatory compliance needs domestically and abroad?

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To help ensure our new products, solutions and services meet legal and regulatory requirements wherever we plan to launch them, we use a product development governance process that is composed of key functional representatives from our business leaders, regulatory, quality, legal, R&D and manufacturing organizations that meet at a regular cadence, all the way from concept to commercialization.

Here from the get-go we decide on the scope of the work from early on, clearly document the design inputs and use this to identify the corresponding regulatory requirements to obtain country marketing authorizations. Typically, organizations that don't spend that energy or forethought will pay a huge price in development delays and customer acceptance when development is not precise and decisions are made as an afterthought. They may also face patent infringement lawsuits.



When it comes to the journey from design to commercialization, what is one piece of advice that you wish someone had given you?

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Well, our ideas that don't work often have more power to make us stronger, better, faster than an idea that is successful and sails through from concept to market quickly and easily.

Of course, in our industry, there is no room for failure in terms of patient safety or product efficacy. I'm talking about ideas, concepts that work within those parameters, yet somehow miss in affordability, or customer needs, or customer experience.

What I'm saying is, we learn more and get smarter when we struggle, yet we often wish to avoid that kind of learning. I say, embrace it. Jump enough times and you will learn to fly.

Our leadership team at Terumo BCT has to have the courage to ensure we have space to fail, and the ability to learn from each failure. This helps us understand how to get better results and how to ensure our teams are growing, developing, evolving, maturing and changing. We all must try to get better every day. For ourselves, for our customers and for the patients we ultimately serve.



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Terumo BCT is a global leader in blood component, therapeutic apheresis and cellular technologies. We believe in the potential of blood to do even more for patients than it does today. This belief inspires our innovation and strengthens our collaboration with customers.

www.terumobct.com

American Medical Device Summit 2016

October 5th,
8:50 am – 9:30 am



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Terumo BCT

ACCELERATING YOUR JOURNEY FROM CONCEPT TO COMMERCIALIZATION

How the best companies are using performance, safety, business economics, risk management, and regulatory requirements as a basis for device design

'Design thinking' as a driver for new medical device development

Building quality into your device early in the design process to avoid costly missteps in the future

Ensuring the design of a medical device can be cheaply and easily modified to meet different international regulatory standards

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American Medical Device Summit 2016

Oct 5-6, Chicago, IL

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