Interview with
Reece Moore.

Head of Digital Technologies at PhoenxPLM.

What are manufacturers talking to you about right now?

Definitely Industry 4.0 and the fourth industrial revolution. Manufacturers are obviously keen to utilize a lot of the new transformative technologies, to help them develop products, but also transform the actual manufacturing process itself.

What manufacturers are particularly talking to us about though is how to improve the management of their product data and processes to harness these technologies. They look to us for advice on how to digitally transform their businesses using product lifecycle management software.

What is your advice to those who are keen to adopt these technologies?

We advise them on how to achieve digitalization throughout the product life cycle phases - ideation phase, where you're doing your concepts and designs; realization phase - where the manufacturing takes place; and utilization - how the product is used and maintained by the customer.

Many manufactures are trying to manage product data in multiple different systems and often siloed systems.

They may have a document management system managing their product documentation, a PDM system managing their CAD data, another system managing requirements. Basically, a whole host of spreadsheets that are managing their product. It's very hard for them to link that data together and understand the impacts when they perform change.

Environments with siloed systems can lead to inefficient processes. It can become slow and expensive to develop products, and product quality is sacrificed. There are often recurring issues during the manufacturing process too. *My advice is, it can become complex to solve these issues when you're having to manage data that's in multiple systems that aren't connected together. It's time to look at PLM and see how we can solve those particular issues.*

What is PLM?

PLM stands for Product Lifecycle Management, and the idea of a PLM system is to manage all IP and product knowledge throughout the lifecycle of a product. It manages data from when you are developing requirements right at the start, then the design process, manufacturing, how you service and maintain a product; right through to the end, which is disposal.

In terms of some of the key features of PLM, PLM allows you to design across domains. It brings together into one system the mechanical designs, electrical design, software designs, and simulation data. It allows you to manage your product documentation in the same system and manages your Bills of Materials.

Remember that PLM is generally not just one BOM too. In a product there's multiple BOMs, depending on what view of the product you want. Engineers obviously may want their engineering BOM, which is defined in terms of function processes, whereas a manufacturer's BOM, is defining how they manufactured the Bill of Material. PLM allows you to define all these different BOMs, and link those BOMs together.

PLM is a workflow process engine that allows you to standardize and streamline processes across all those different domains, and across the lifecycle of the project. It also allows you to manage your change across the product, so if you're changing a requirement, for instance, it allows you to easily assess the impact in the engineering world, manufacturing world, and service world.

PLM brings together requirements, service plans, service execution, process plans and suppliers. It can transform your business by allowing closed loop quality of management, cost management, managing compliance, material, supply chain management et cetera.

In essence PLM is the single source of truth for your product. You can begin to look at your products at various points in the lifecycle, and it presents that view to you in the way you need it, when you need it.

How is PLM different to PDM?

That's a common question we get asked. PDM stands for product data management, and a lot of our customers think they're one and the same. Historically PLM systems have been generally developed from the starting point of an original PDM system.

PDM though is only a small part of PLM, and it's often just a good starting point to introduce PLM.

In terms of what PDM system does though, it's really around management of documents, drawings, and CAD models, so it provides things like revisioning and version control. It allows you to check out and check in product data.

PLM offers much more functionality than PDM.

How is PLM different to ERP?

A lot of customers, particularly in Australia, already have an ERP system, and they ask, why do we need a PLM system as well? Their ERP system is, as far as they're concerned, the source of their product data, but in reality, they serve different purposes.

ERP does manage Bill of Material, but it's mainly focused on what manufacturing needs to build at that particular time. It doesn't handle, historical BOMS or different views of the BOM, as well. An ERP is more transactional based. It really lacks the flexibility that you need for that innovation process when you're designing the products. That's really where PLM fits in.

PLM will manage all the different phases of the lifecycle, from requirements, concept, design, build procedures, production, commissioning, maintenance, and then right down to disposal. They have two different purposes; having said that, there is a crossover point between PLM and ERP, and that's usually around that production phase. We often see a common requirement is to develop an integration between PLM and ERP.

The other thing we find is people try to configure their ERP system to meet some of the requirements that Product Lifecycle Manager has. From our experience, it generally fails. You often take years to try to configure the ERP and it just never works. My advice is to use the right tool for the right job. Don't try to perform ERP functions in PLM, and vice versa.

What are some of the main business drivers that would steer a company to adopt PLM?

In the global marketspace it's becoming more important to be first to market, and to do that you need to reduce your design lifecycle. PLM allows you to do that in a collaborative environment. It increases, what we call, the digital thread across stakeholders and domains – through design, manufacturing, and supply. Product information becomes connected across the business, which, in turn, can quickly shorten the design lifecycle.

A second key driver is the demand for more functionality within existing products, this means there is often going to be more complexity to the product data. In this case you need a PLM system to manage these now complex products. There's too much information to be managing it all in spreadsheets and siloed environments. In addition to the complexities, customers are also wanting more variation, and to be able to configure to their exact requirements.

Finally, a third driver is compliance. There is a lot more regulatory compliance these days, particularly environmental and safety requirements. PLM really helps manage that compliance, so much so, we can attach compliance documentation to your product itself. When your product changes, you can make sure that you are still compliant.