Randy Stott, Managing Editor

The BIG Picture

When you work day-in and day-out with components—like gears, bearings or electric motors, for example—it's easy to forget that those components are always part of a much bigger system. The best gears can fail if the system around them fails. Likewise for bearings, motors, couplings and so on.

To make matters more complicated, today's components are surrounded by, driven by and controlled by electronics. Sensors give feedback to controls, and components have to respond.

This issue's focus on mechatronics highlights this systems-oriented approach to engineering. Perhaps Jeff Hemphill, CTO of Schaeffler Group USA said it best: "We make everything from washers to complete mechatronic solutions. We come at it from a very unique perspective in that we really understand all the details and exactly how everything comes together at the system level."

In the article "Changing Technologies, Changing Perspectives," by Senior Editor Matthew Jaster (page 18), you can read more of Hemphill's insights about how Schaeffler Group's approach to mechatronics is helping them engineer systems that are more suitable for the automobiles and machinery of tomorrow.

Of course, mechatronics isn't really a new concept, as Senior Editor Jack McGuinn points out in his article, "Mechatronics – Gaining Control and Applications" (page 22). It's actually been around for some time, but only in recent years has it really taken on a life of its own, especially in fields like robotics, medical devices and even oil & gas.

But the big picture can go even beyond total systems design. Alex Cannella's article on product lifecycle management (page 26) delves into the reasons why manufacturers should consider adopting a PLM strategy. Today's software is tapping into the Industrial Internet of Things, taking readings from sensors in the field, to give manufacturers the feedback they need to keep improving products, anticipate maintenance issues and mitigate risks. PLM's goal is to get the right information into the hands of the people who can use it. So it's a tool that extends far beyond the design engineering department and touches on marketing, sales, shipping and legal issues.

What does development look like at your company? Do your products take advantage of the Industrial Internet of Things? Are your mechanical engineers working closely with the electrical engineers? Do you develop individual components or complete systems? And perhaps most importantly, do you develop your products with the whole lifecycle in mind? I'd love to hear your thoughts, so please drop me a line at *wrs@powertransmission.com*.

In the meantime, happy reading. I hope you enjoy the big picture.

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