



## VIEW POINT

Haluk Kizilay



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# NO MORE TRIANGLES

*Haluk Kizilay has built over 30 years an impressive career that spans everything from tyre design & development to strategic planning, marketing and business development with global leaders including Bridgestone Turkey and Cooper Tire & Rubber. In 2019, he established TIC (Tire Industry Consulting). Haluk is one of the authorised judges of EU Horizon 2020 work programme and one of the registered researchers of TUBITAK, the Scientific & Technological Research Council of Turkey. In this article he focuses how to enhance New Product Development (NPD) process.*

**A**s we all know, the automotive world is changing at a rapid pace world-wide mainly due to new customer trends and the growth of the middle class, while the performance requirements of tyres continue to raise ever higher, meaning that even further advancement in tyre technology now becomes essential.

Tyres are used on various vehicles on various road conditions. Therefore there are also various types of tyres which have different characteristics. Historically, the main criteria for judging tyre performance has been wear life, with some need for Cut resistance and Comfort.

Requirements and needs vary somewhat from region to region and for different applications. Having said that, additional general trend is to reduce tyre rolling resistance in order to improve fuel economy which is seen increasing over decades. If we consider commercial truck tyres, designing tread compounds for low rolling

resistance typically involves approaches that cause some loss of wear and cut resistance. This is the challenge. Therefore, we all together developed an analogy called "magic triangle" during the years that used for all tyre groups such as PCRs and TBRs.

But now it is time to say "No more triangles"





The requirements of tyre performance parameters are much greater than in the past, therefore now we work with “the octagon.” Today for example, it is not enough to optimise “wear & rolling resistance & cut resistance” parameters for any TBR commercial tyres since we also need to consider additional parameters such as traction, tear, cut growth, irregular wear and others.

It is sure that in the near future our shape would be not be “octagon” since we have been just started to talk about new customer requirements as well as legislations. In order to meet all, we are now developing new technologies such as advance modeling and testing, sustainability models, autonomous driving, new green materials and others.

In that respect, Tyre industry should continue to improve New Product Development (NPD) process even harder in the future by expanding R&D efforts.

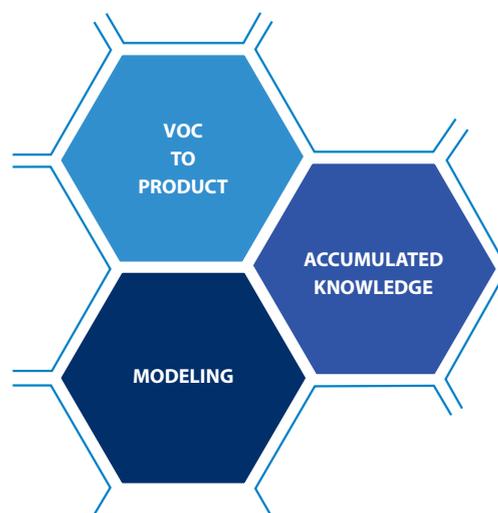
Consequently, tyre technology and tyre knowledge will be extremely important to compete

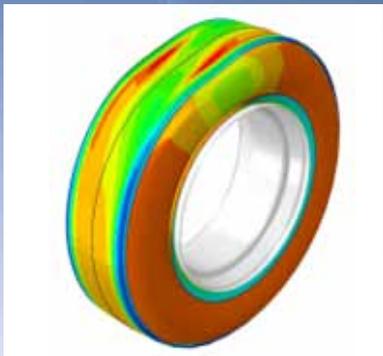
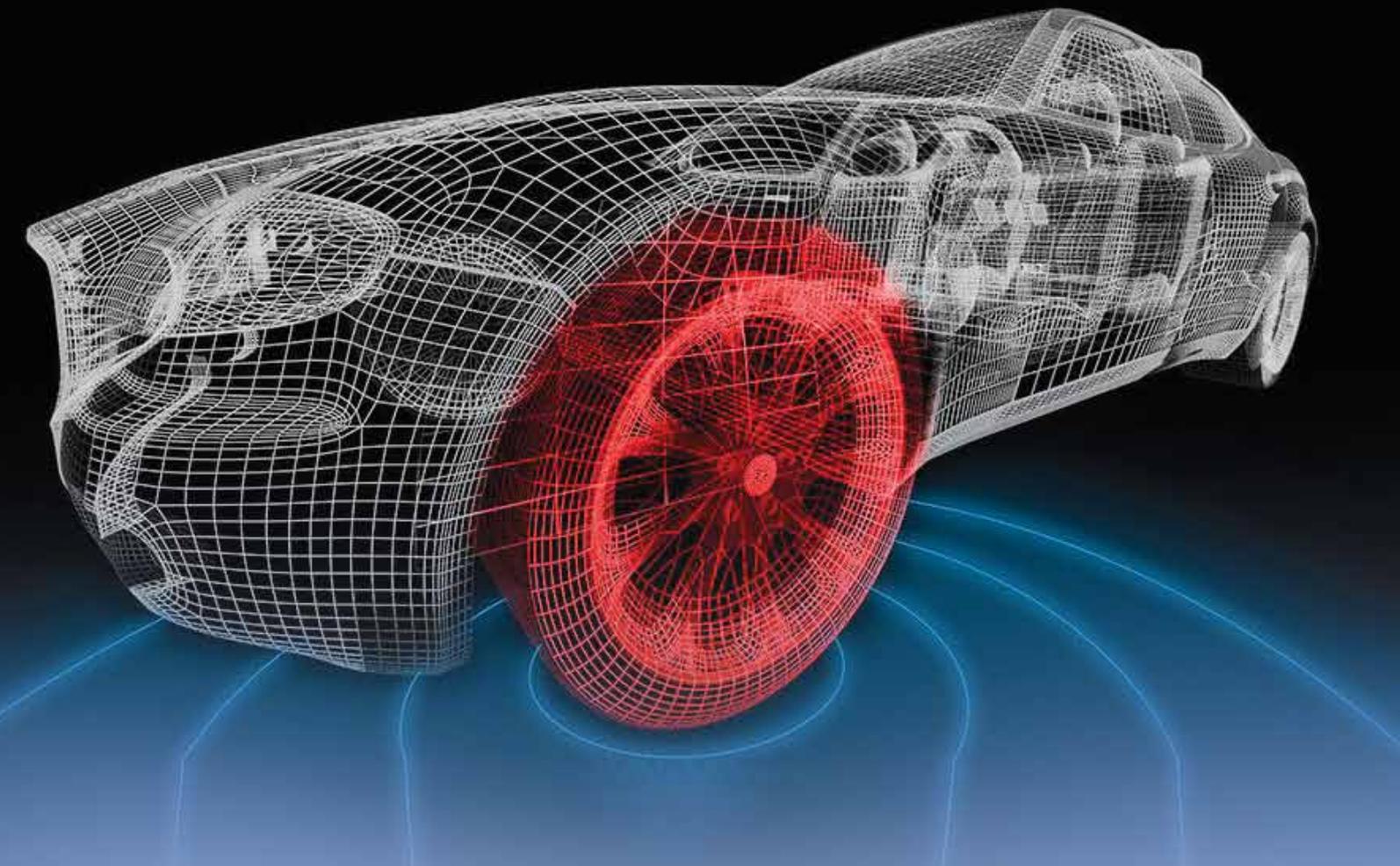
in the future, more than at any time in the past. As we all know, there are several key processes to design and to produce the right tyres to meet the customer requirements. According to TIC, the New Product Development process (NPD) is the most important one which helps companies to work with the “octagon.” It is obvious that the question becomes how to enhance the NPD process although we have been doing since many decades.

In this article, TIC-Tire Industry Consulting recommendations are given for NPD improvement items regarding quality, amount and strength of the process.

**1. VOC to Product:** Our motto is “ Right Product for Right Service”

This is the key start point to get Voice of Customer (VOC) and deploy to tire design. As TIC, we strongly recommend to use Quality Function Deployment (QFD) which is one of the best systematic approaches for NPD.





Another approach is to design the tires based on Market Severity Index (MSI) which is a systematic way to collect and evaluate the real market facts and requirements. It should be developed as tailor-made by experts based on customer unique needs.

**2. Accumulated Knowledge:** TIC considers knowledge is power and it is the key asset of any organization. We advise to establish Accumulated Knowledge Management (AKM) system to utilize all gathered information and experiences into NPD process, especially for "Tacit Type" knowledge which is the most difficult one to keep in any organization. AKM system makes

companies a knowledge base organization and reduces the loss of intellectual capital.

**3- Modeling:** TIC believes in "Speed to market with right solutions and innovation." Design & development process duration is getting more and more crucial and all manufacturers are trying to reduce it by using modern simulation and modeling technics. Modeling enables companies to launch world-class product faster and more cost effectively than ever. Therefore, we recommend using the Virtual technology which is essential to understand how all the various parts of the tire interact and add up to whole. With modeling and simulation, you will foresee the

full effects of cascading events as well as novel events that our mental models cannot even imagine.

TIC Subject Matter Experts (SME) have vast hands on experience for the above topics and ready to support your activities. We provide specialized technical solutions for your challenges and TIC guarantees a high standard of professional-ethical principles that we have kept and developed for years.

Should you require more info, please visit [www.ctireindustry.com](http://www.ctireindustry.com) and contact [halukkizilay@ctireindustry.com](mailto:halukkizilay@ctireindustry.com) or call us directly.