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Higher, Faster, Smarter

The agricultural sector in Middle- and Western Europe is the industry with the highest productivity increase. In former times, around 70 years ago, a farmer fed around two to three human beings; nowadays that amount has risen up to around 120 people! Currently we encounter highly developed machines with immense capability in many sectors. However, we can also recognise that the efficiency and the productivity is not growing adequately without the intelligent control components. The machine manufacturers have reacted and now provide highly intelligent operating systems. Even if not all of them are easy to operate, they are used to improve the average use of installed performance capabilities.

The next logical step, however, is the digital interconnection of the machines. A huge challenge here is the fact that farmers own machines from diverse manufacturers where machines and the systems do not always interact in an optimised way with one another. Thanks to different platforms, and due to the well working associations, the agricultural engineering industry is on a good way and further ahead of other industries when it comes to interconnectivity.

To solve the big challenge of providing foods for the growing world population, topics like productivity, precision, sustainability and documentation as well as environmental protection guaranteeing the production resources are major topics. The most important aspect to counter these issues is a more flexible

technology with a target of contextual usage of technology and working capital. This is also a major influencing factor for the powertrain engineering.

To reduce CO₂ means we need to decrease the consumption of energy with reference to the working processes. Equally important is to focus on plant protection and nutrition of the individual plant, combined with even higher productivity.

Highly developed sensors, flexible and precise actuators and powertrain technology as well as efficient communication are the key to success here. For example, electric powertrain engineering will reach a new level of importance after about 10 years following the launch of the first series of vehicles in agriculture. The availability of a stable and reliable power source between 10 and 20 kW from tractor to implement with acceptable cost is a platform for many applications. Here the development of the 48/80-V technology for commercial vehicles, passenger cars, and forklift trucks can also provide future technology advancement and components.

In my opinion, concerning new technologies there are two really important targets we must focus on. For the user, technology advancements have to save working capital and make machines more reliable. For the community, new technologies need to help to further positively reinforce the perception of the agricultural sector in the sense of accountability and documented processes.