

## MOBILITY IS VERY COMPLEX

PUNCH Group is fully involved in the mobility revolution that is taking place worldwide and dictated by the accelerated de-carbonization process, especially in Europe, by the European Green Deal. Pierpaolo Antonioli, CTO of the PUNCH Group answers to some questions.

### Could you tell us something more about the projects the PUNCH Group is currently working on?

To face this challenge PUNCH is investing in all the competencies capable to allow the development of a strategy that must be sustainable, effective and support a transition that cannot happen overnight.

We are combining existing competences of PUNCH in Transmissions and Hybrids with the ones acquired from Torino in Engine Development and Electronics. This creates a unique development pool capable to industrialize new technologies that will address new mobility requirements with a strong focus on final customers and the existing supplier chain.

Customers and Supply Chain are the most important elements to create a sustainable strategy. Mobility is a very complex word that includes several sectors with different requirements and technology transition times. Passenger cars, public transportation, agriculture, commercial transportation will have different impacts in the mobility transition.

For this reason, it is not possible to approach such a complexity with "one size fits all" but we need to introduce technologies that fit the sectors, allow a total cost of ownership affordable to the customers and provide enough time to our supply chain to make the investments needed to convert their production lines while integrating the new technologies.

### As CTO, you are constantly up to date on the new technologies, which are the most important trends that are shaping the automotive market?

I was appointed as CTO of PUNCH Group with the intent to create the right synergies among the different teams and to establish a product portfolio. This allows the group to leverage the technical capability to face the big transformation challenge we have in front of us. From this perspective we are focusing on three different trends that could be consistent with our future portfolio:

- Hybridization and Electrification of existing powertrains to allow better CO<sub>2</sub> while providing fun to drive;
- Transition to alternative fuels like Hydrogen and e-Fuels as a mean to reduce CO<sub>2</sub> with limited changes to existing architectures;
- Exploitation of Artificial Intelligence and Data Analytics to improve existing product performances;
- Multivariable Model base controls to allow a more complete management of very complex architectures.

### The ongoing electrification and diversification of fuels is a reality, according to you, which fuel will lead the market in the next 10 years?

As mentioned during this interview alternative fuels will drive the transition towards ZERO emission targets because it is the affordable path for a more sustainable model of electrification. From this perspective carbon neutral fuels, or in general e-fuels are one of the key focus areas to prolongate the life of existing internal combustion engines. They are based on the production of Hydrogen from renewable energy sources combined with existing CO<sub>2</sub> filtered from the air to make synthetic fuels.

This is a reason why PUNCH Group recently created PUNCH Hydrocells, a newco dedicated to the development of Hydrogen technologies for production, storage, distribution and power generation.

### Nowadays new regulations push citizens to change their behaviors with regards to means of transportation, how can a company take advantage of its knowhow to exploit new market segments?

Regulations are aiming to reduce the dependency of mobility from carbon fossil fuels to limit the emission of pollutants in the cities and reduce CO<sub>2</sub> emissions that are responsible for global warming.

PUNCH is developing micro-mobility solutions to provide city drivers with last-mile alternatives easy to carry in the vehicles and fully aligned with PUNCH de-carbonization mission. TO.TEM is PUNCH newco that is actively developing the first product of this series: Lynx, a three-wheeler kick-scooter, that integrates safety and driving concepts inherited directly from the automotive experience in the design of vehicles and propulsion systems. PUNCH is introducing AI algorithms also in a not strictly automotive sector like micro-mobility and with the creation of AITEM in 2020 is even exploiting its knowhow in AI for medical diagnostic.



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