

# April 2020 | Bulletin

## ADAS

### What's inside ?

1. What self-driving cars are doing in midst of Covid-19 & its post-pandemic impact
2. Key industrial developments related to Cruise, V2X connectivity, Perception & others
3. Ambitious plans of Didi & South Korea for higher level of autonomy & industry voice incl. post-covid impact on connected vehicles

# Key Takeaways in Bulletin

## Themes covered in this scope

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### Activities by self-driving cars in midst of Covid-19

- Impact of self-driving cars due to virus breakdown
- Activities by self-driving start-ups in midst of pandemic

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### Key Cruise related activities by players in April'20

- Based on key industry developments

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### Key ADAS product development & V2X connectivity solutions by players in April'20

- Based on key industry developments

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### Other Key Highlights

- Ambitious plan of Didi & South Korea for higher automation
- Industry voice incl. post-covid impact on connected cars

## Key Takeaways

- Increase in **autonomous delivery services**, improved options for **ride services**, mobilizing the **AV community** and **ease of regulation** will help to accelerate self-driving segment post the corona outbreak

- While **Voyage** is inching towards broader commercialization in **AMoD**, **Tesla & Volva** are developing its driver assist features with focus on active safety & speed up its autonomous driving technology in **passenger** vehicle segment

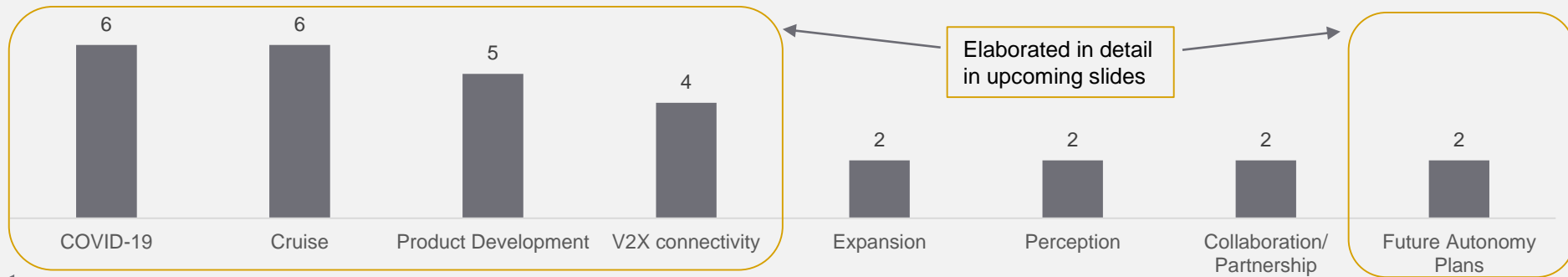
- Players are focusing on **safer, reliable** and **scalable platforms** for higher levels of autonomous driving which can be easily **integrated & customized**
- V2X solutions for autonomous transportation is gaining traction for **safety, quality, security** and reduce the **number of collisions**, where **regulations** has a major role to play

- **Didi** is working on **collaborative partnership models** to strengthen its **L4** self-driving capabilities & aims to accelerate this in next three years; whereas **Korean government** had announced its ambitious plans of investment in self-driving technology by **2027**
- Higher penetration of **artificial intelligence** and **automation** within the auto space in post COVID-19 time sees significant opportunities for connected cars

## Summary of Industrial Developments in April'20

Among 30 key industry developments, major buzz is seen in Covid-19, cruise, new product developments and V2X connectivity related areas

### Summary of Key Activities in ADAS in April'20



#### Key companies involved



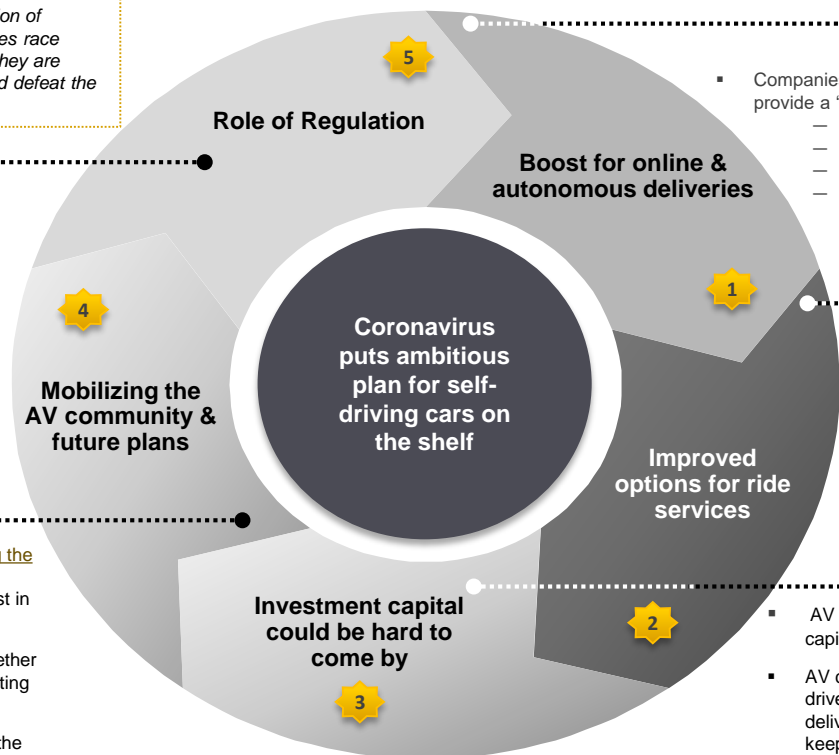
## Impact on Self-Driving Cars due to COVID-19

Increase in autonomous delivery services, improved options for ride services, mobilizing the AV community and ease of regulation will help to accelerate self-driving segment post the corona outbreak



### FutureBridge Analyst Comment

Despite setbacks, coronavirus could hasten the adoption of autonomous vehicles and delivery robots. As companies race toward the first street-legal fully autonomous vehicle, they are simultaneously developing technology to help the world defeat the next pandemic.



**nuro beep navya keenon pony.ai**  
Autonomous Mobility Solutions

Dmitry Polishchuk, head of self-driving cars at [Yandex](#), believes robotaxi's ability to reduce contact will appeal to drivers, as well as rider **Yandex**

**waymo gm argo**

Acceptability Impact Post-Coronaworld

Low High



## Activities by Self-driving startups during COVID-19 pandemic

The pandemic has expedited the public need for contactless delivery services & aims to boost autonomous delivery of essential goods & services



Baidu 百度

Baidu has developed several tools that are effective in building awareness and screening populations, including an AI-powered, non-contact infrared sensor system for temperature monitoring



- Nuro R2 is used to delivery food & groceries after receiving permit from California DMV to test self-driving passenger-less delivery vehicles
- It recently started to autonomous deliveries of medicines and PPE in hospitals



nuro

- Chinese start-up UDI deploys self-driving vans to deliver food and meals to lockdown areas
- UDI's autonomous vehicles is equipped with a device that sprays disinfectant operates near a hospital in Shenzhen



- Idriverplus, which makes a street-sweeping vehicles is used for disinfection efforts in hospitals in China



智行者 IDRIVERPLUS

### Activities by self-driving start-ups in midst of COVID-19

- Optimus Ride pivots role of autonomous vehicles during COVID-19
- It delivers meal & used for intra-community Amazon package delivery for PVE residents in Fairfield, Calif



- Baidu has partnered with Neolix to deliver food and supplies to hospitals with the Apollo autonomous vehicle
- Neolix sees a 10-fold increase in autonomous vehicle orders



NEOLIX



OPTIMUS RIDE

- Pony.ai launches contactless deliveries to combat COVID-19 in California
- It has teamed up with e-commerce site Yamibuy to launch a driverless delivery service



- Self-driving startups Beep and Navya explore driverless transport for coronavirus lab specimens
- Driverless shuttles are used to transport Covid-19 tests within the Mayo Clinic campus in Florida

beep  
Autonomous Mobility Solutions



navya  
be fluid



FutureBridge  
Analyst  
Comment

The COVID-19 pandemic is putting pressure on deliveries and local logistics and has expedited the public need for contactless delivery services. Autonomous vehicles could help alleviate the strain on existing delivery services while reducing the risk of exposure for citizens. Further, there is massive unmet demand of delivery of groceries and other essential items to people's homes and contactless deliveries are a huge selling point, start-ups exploring this segment might ultimately be more helpful in a post-coronavirus world.



Low to High business impact post pandemic



Several factors have been considered while ranking like:-  
1. Number of services it cater one or more than one. 2. Approvals from local bodies to test self-driving on public roads. 3. Network coverage/presence/ tie-ups

## Key Cruise related activities by players in April'20

While Voyage is inching towards broader commercialization, Tesla & Volvo are developing its driver assist features with focus on active safety

### Voyage gets the green light to bring robotaxi service to California's public roads



- It has cleared a regulatory hurdle that will now allow to expand its self-driving service on the public roads. The company is also applying for a traditional Transportation Charter Permit, which is required for limousine, bus and other third-party charter services. >>
- Analyst Comment :** The permit, which is part of the state's Autonomous Vehicle Passenger Service pilot, will allow Voyage to expand beyond traditional AV testing and will help to move towards broader commercialization. Other companies like Aurora, AutoX, Cruise, Pony.ai, Zoox and Waymo have all received permits to participate in the CPUC's Drivered Autonomous Vehicle Passenger Service Pilot program.



### Tesla drops a bunch of new Autopilot data, 3 billion miles & more



- The automaker is leveraging its large customer fleet of electric vehicles equipped with an extensive array of sensors to collect data and improve its driver-assist features >>
- It also wants to use it to help regulators see that its systems improve safety on the road



#### Analyst Comment

- In 2014, Tesla first revealed its basic Autopilot feature. In 2018, it first reached the first billion miles driven with Autopilot activated. Now is less than two years, Tesla's fleet has added 2 billion more miles. The next interesting data point is how many intersections Tesla vehicles are going to go through with the new '[Traffic Light and Stop Sign Control](#)' feature

### Volvo prepares to speed up autonomous driving technology for its cars



- [Volvo](#) and Swedish supplier [Veoneer](#) will split their automotive software joint venture Zenuity. One part of the company will focus on the development and commercialization of unsupervised autonomous drive software and will be owned by Volvo Cars. The other arm will focus on further continuous development and commercialization of ADAS. The latter will be integrated into Veoneer. The new company is expected to become operational by the third quarter of 2020



#### Analyst Comment

- In [2017](#), Volvo and Autoliv announced the launch of Zenuity to develop new ADAS and AD technologies. In [2018](#), Autoliv decided to spin off its electronics business segment by the name Veoneer. Now after two years, [Volvo](#) decided to split the partnership and are taking control of the autonomous driving development.
- The new company that will be part of Volvo aims to develop safe and autonomous driving software for the next generation of its SPA architecture known as [SPA2](#) in the XC60 & XC90 range. As per company it will further strengthen its plan of offering [Highway Pilot & Level 4](#) by 2022 with focus on active safety.
- The split will help [Veoneer](#) to achieve its annual savings of \$30M to \$40M and will also help Zenuity to reduce its ongoing losses of \$50M annually.

## Key Product development by players in April'20

Players are focusing on safer, reliable and scalable platforms for higher levels of autonomous driving which can be easily integrated & customized

### Phantom AI raises \$22M to develop ADAS products



- **Usage :** To expand availability of its modular, software-based platform, which lets OEMs and Tier 1 automakers select components they wish to integrate and customize their configuration
- **3 core products :** PhantomVision, PhantomFusion and PhantomDrive >>
- **Analyst Comment :** Phantom AI provides a comprehensive autonomous driving platform that features computer vision, sensor fusion and control capabilities. It's modular, software-based vehicle stack offers high degree of integration & customization for greater flexibility which can attract interests from several automakers, truck OEMs & multiple Tier 1 suppliers and has the potential to grab a significant slice of an ADAS market in the near future



### NXP makes strategic investment of €8 million in Kalray to develop ADAS products



#### Funding Usage areas

- To develop safer, reliable and scalable solutions for autonomous driving
- To develop and deploy L2 to L5 common hardware & software platforms >>



#### Analyst Comment

- The partnership intends to bring an integrated, scalable solution to the automotive market, including CPU processing, neural network computing, functional safety capabilities and an optimized tool chain which will help customers in delivering increasingly automated vehicles

### NIO Introduces Navigation On Pilot And Revamped Parking Assist



The Chinese company NIO, introduced two new, in-house developed ADAS features >>

#### Navigation On Pilot (NOP)

#### Self-automatic Parking Assist with Fusion (S-APA with Fusion)

- **Navigation on Pilot :** Allows the vehicle to drive on & off ramp, overtake, merge lanes and cruise according to planned routes
- **Self automatic Parking Assist with Fusion (S-APA with Fusion) :**
  - It combines the surround view cameras with the ultrasonic radars to understand the immediate environment more accurately, and can be engaged via NOMI's voice control system
  - It will be able to detect parking slots based on parking space lines, recognize multiple consecutive available parking spaces, and choose a target parking slot
  - The 'S-APA with Fusion' also represents a full elevation from the existing APA in terms of searching, detecting and choosing parking spots, the interaction experience, and the parking capabilities



#### Analyst Comment

- The NOP reminds of Tesla's Navigate on Autopilot, while Tesla's solution seems to push parking assist forward towards a higher level of automation (although not autonomous yet)
- Also with introduction of NIO Pilots "Selected Pack" which includes list of ADAS features it is enabling more users to experience and take advantage of the evolving capabilities

## Key V2X connectivity activities by players in April'20

V2X solutions for autonomous transportation aims to provide safety, quality, security and reduce the number of collisions. Regulators like FCC has to make certain commitment which allows industry to trial and test V2X radios & avoid any duplication work in near future if it plans to re-allocate the safety spectrum

### iSmartWays, a Canadian Startup Secures Multi-Million Pre Series-A Funding for expansion of V2X capabilities



- **Usage :** To strengthen its existing V2X capabilities and expand R&D competences in 5G-based Cellular-V2X, automated vehicles and smart mobility. It will also help company for its North America expansion plans to accelerate the deployment of connected vehicle solution >>
- **Analyst Comment :** Over the past few years, iSmartWays is developing automated driving and smart transportation solutions. Recently it has completed SAIC Motors C-V2X mass production and automated driving demonstration pilot with data driven solutions to help SAIC's future mobility platform. The company has a strong potential to capture the C-V2X market once the technology will establish in the market in next 3-4 years.



### Accedian and Savari Partner to Deliver Quality Assurance for C-V2X Services



- The partnership will focus on delivering quality of service to V2X edge applications deployed both in the cloud & at the edge that ingest large amounts of data from vulnerable road users, vehicles & road infrastructure >>



#### Analyst Comment

- The partnership intends to provide safety, quality and security across autonomous fleets & vehicles and will also help to reduce the number of automotive collisions. This provides a viable solution for automotive OEMs, their fleet management and Mobility-as-a-Service providers (MaaS), and their global telecom partners as they introduce V2X solutions for autonomous transportation

### Auto industry puts pressure on FCC with V2X commitment



The Alliance for Automotive Innovation announced that the auto industry is committed to deploy at least 5 million V2X radios on vehicles and roadway infrastructure within the next five years. >>

#### Condition for the same

The commitment is only valid under the assumption the FCC allocates the full 75 MHz within the 5.9 GHz Safety Spectrum for transportation safety. This includes allowing cellular V2X (C-V2X) technology to operate alongside dedicated short range communication (DSRC).

*"This commitment represents more than 50 times the number of devices on the road today"*  
~ President and CEO John Bozzella, Auto Innovators



#### Analyst Comment

- Earlier this year, FCC published a proposed rule that would permit unlicensed devices to operate in the lower 45 MHz portion of the band. The upper 30 MHz portion will go towards intelligent transportation system operations like V2X
- The alliance urges the FCC to maintain the full spectrum for transportation safety technology. Allowing unlicensed use, the alliance argues, could pose a significant risk of harmful interference. Also, reallocating V2X to a spectrum outside of the 5.9 GHz band is not feasible.
- As many players in the transportation ecosystem are already working to deploy V2X technology in the 5.9 GHz band, the commission should take necessary actions at the earliest if it plans to re-allocate so as to avoid any duplication work in the near future

Read our deeper thematic coverage incl. market competition, regulation on V2X connectivity in [Q1'2020 Pulse – ADAS](#)



## Future plans for Autonomy announcement in April'20

Didi is working on collaborative partnership models for its Level 4 self-driving capabilities & aims to accelerate this in next three years; whereas Korean government had announced its ambitious plans of investment in self-driving technology by 2027

### Didi Steers towards more trips, self-driving in three year plan



- Chinese ride-hailing giant Didi Chuxing has unveiled a three-year development plan that provides a roadmap for how it sees itself developing, including the volume of trips it hopes to log and businesses that will become its main focuses >>

#### Aim

- Didi aims to complete more than 100 million trips a day and have 800 million monthly active users globally by 2022

#### Current

- Didi had made over 1 billion trips in its international markets as of early 2020, and it sees this as an opportunity to diversify. Currently, the company has presences in Japan, Australia and Latin America. Its businesses in Japan range from ride hailing to food delivery



#### Analyst Comment

- Last year, Didi had launched self-driving rides in [Shanghai](#) and planned them to expand beyond China by 2021. The company has ambitious plans to offer pilot services to more than 30 different types of car models, all equipped with [Level 4](#) autonomous driving capabilities. The partnership plans with [Nvidia](#) to develop self-driving cars with Level 4 capabilities will further accelerate its fully autonomous development plans.
- The announcement by Baidu can be related in response to Tesla revealing its [3 billion](#) miles recently with its Autopilot feature

### South Korea to invest 1.1 tn won in developing techs for self-driving cars by 2027



- South Korea it will spend some 1.1 trillion won (US\$896 million) on developing technologies for "high automation" vehicles that can lead growth in the automobile market >>

#### Aim

- The investment calls for the development of "level four" autonomous cars, according to the Ministry of Science and ICT
- The ministry then said the country will need to create supporting services and an ecosystem that involves close cooperation between various state actors and the private sector



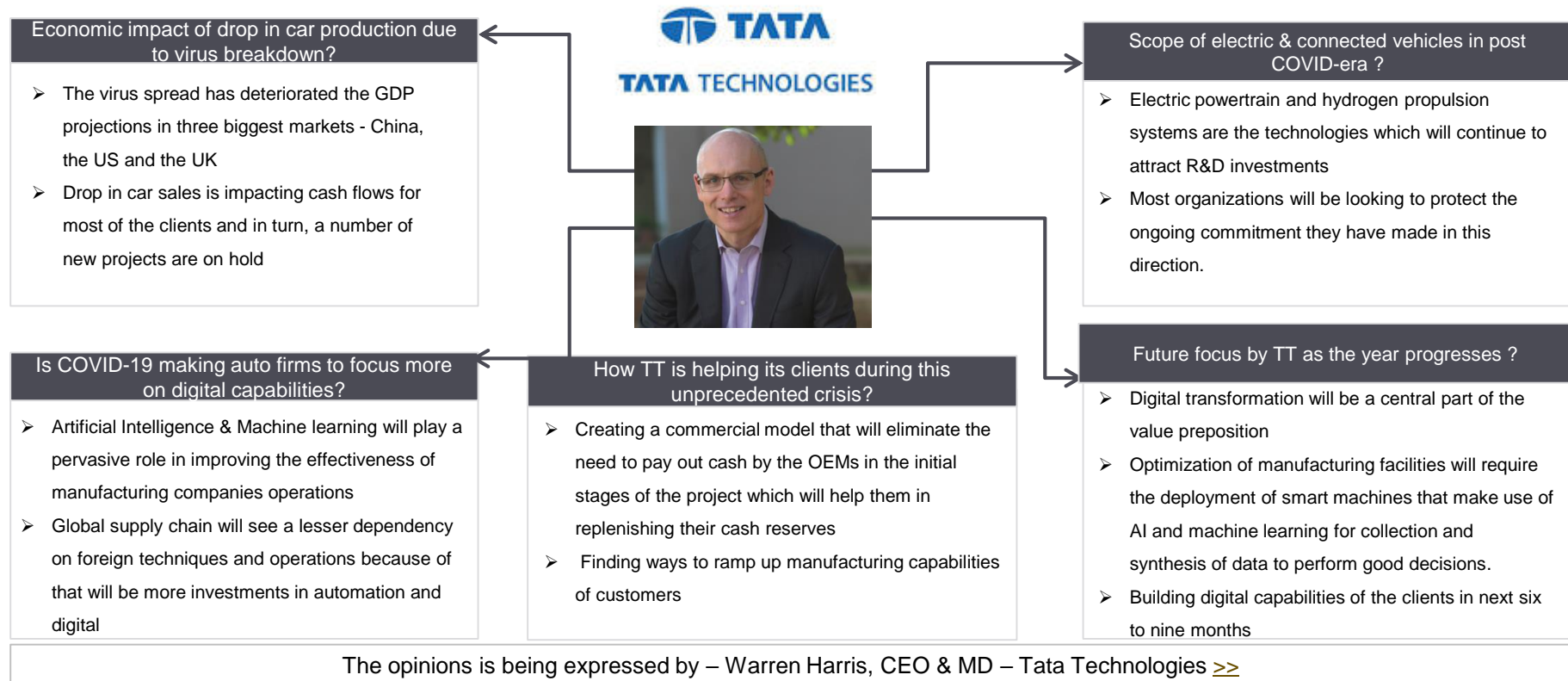
#### Analyst Comment

- Recently, a safety standard for [Level 3](#) automated vehicles was announced by Korean Ministry of Land, Infrastructure & Transport (MOLIT) which focused on main contents for Level 3 like driver availability recognition system, transition demand, minimum risk maneuver and emergency maneuver.
- The safety standards aims to enable commercialization of Level 3 automated vehicles in Korea by [July 2020](#)
- In line with the vision, [Hyundai](#) Motor Group is planning to invest 40 trillion won in the future car industry by 2025 and the Korean government is going to support the group with regard to deregulation, tax benefits, engineer training and automotive electronic component development

Read more about the safety standards proposed by Korean govt in our [Q1 2020 Pulse - ISS](#)

## Industry Voice – Post Covid-19 Impact of connected vehicles

Higher penetration of artificial intelligence and automation within the auto space in post COVID-19 time sees significant opportunities in connected vehicles



# Other latest release to read

Q1'2020 – ADAS Pulse 2.0 >>>

## What's new in Pulse 2.0 ?

1. Deeper thematic coverage incl. market competition, regulation on V2X connectivity
2. Research & IP innovation related to our themes

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