Automotive

# The metaverse and the automotive sector: legal possibilities and challenges

We have recently seen approaches from different market sectors to the new business possibilities offered by the metaverse. The automotive sector is one of the pioneering sectors in this type of activity.

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The metaverse is nothing more than a 3D virtual world, in which different users, through virtual reality devices, interact with each other using their avatars, which are the graphic representation of their identity. Users can, for example, purchase digital assets, attend events (concerts, museums), as well as enjoy "product experiences" - on which brands have been working intensively for some time to differentiate themselves and create brand loyalty - in the metaverse. All of this opens up a wide field of new business actions.

We will now discuss some scenarios and use cases from the automotive sector in the metaverse and relevant legal aspects.

## 1. Scenarios: the automotive sector in the metaverse

The business possibilities offered by the metaverse for the automotive sector are very varied. To give a few examples, the metaverse will allow customers to live product experiences through the digital twins of the vehicles of a brand that are created in the metaverse, allowing test-drives of the same through virtual reality. The metaverse will be a large product display and showroom, enabling innovative actions for marketing and customer relations professionals. Among other actions, it allows the creation of communities of customers of a brand in the metaverse for which to organise events, and other

customer loyalty actions, such as, for example, actions aimed at giving customers of an automotive brand the right to a series of benefits in the metaverse such as concerts sponsored by the brand, areas for interacting with other users and with the brand or brand ambassadors, etc. The metaverse is also a new sales channel to be considered by the sector and will act as a marketplace for the sale of products/accessories or parts or the new vehicle subscription or rental models. Finally, the automotive sector will be able to integrate, as part of the entertainment offer of the connected vehicle, access to the metaverse from in-vehicle devices.

In addition to the commercial possibilities we have just seen, what is known as the "industrial metaverse", i.e. the possibility of applying related technologies in the virtual and augmented reality environment or 3D printing to the design of manufacturing spaces, is also beginning to emerge in an incipient way. This makes it possible to visualise in the metaverse the needs that may arise in new automotive factories or production processes before they are actually implemented. The same applies to the testing of vehicle models or new vehicle production lines that can be "tested" in the metaverse before their actual implementation.

Several automotive brands are currently advertising their activities in the metaverse. Seat Cupra has recently launched new models in the metaverse and Hyundai and BMW, among others, are also active with actions such as the reproduction of factories and parts in the metaverse and work meetings in this new environment.

## 2. Analysis

Let us now take a preliminary look at three scenarios or use cases that may be of interest to the sector.

### 2.1. *Use of smart contracts in online vehicle auctions*

The rise of new lines of business based on online used vehicle auctions, whether for the professional (B2B) or consumer (B2C) channel, could take advantage of blockchain technology to develop in a more transparent way, adding the metaverse as a new sales channel to the traditional online channels.

These transactions could be carried out with the support of smart contracts, as we have said, adding important notes of transparency and unalterability in the prices and bids of the auction due to the inherent characteristics of this new technology. Auctions can be more agile and reliable, with both the vehicle (either as a digital asset created for the metaverse or as a digital twin of its real-world double) and the participants in the auctions being unequivocally identified, as we will see in the second use case that we will analyse as number 2 below.

Smart contracts are computer codes that incorporate certain instructions that are executed depending on whether or not certain conditions are met. Once deployed on the blockchain, the smart contract is unalterable. Therefore, the challenge is to foresee all possible situations that could occur and to establish the consequences in such cases.

For the scenario we are analysing in this section, i.e. online auctions of second-hand or new vehicles, these transactions have easily verifiable (non-subjective), automatable components, such as the verification of the payment of the price, the availability

of the vehicle at that moment with the required characteristics, and the verification of who is the bidder who has offered the highest amount of money within the time period established in the auction, and the verification of who is the bidder who has offered the highest amount of money within the time period established in the auction, so that the self-executability of smart contracts would not present a major problem and would provide the business with the attractiveness of the transparency and unalterability of the blockchain, as we have mentioned. The real vehicles that are the subject matter of the transaction, through their virtual twins, can be exhibited, verified or virtually tested in the metaverse by potential buyers or bidders in the auction.

The design of the smart contract should take into account certain aspects, such as the 14-day right of withdrawal in the sale and purchase of vehicles that exists in our legal system for cases of distance or off-premises sales. However, this issue is nothing new for the sector, as this right already applies in the case of online purchases and auctions, which is the channel usually used in this line of business. It will simply be necessary to provide in the smart contract that, in the event that a certain order is made by the buyer within a certain period of time, the sale and purchase will be reversed because of the right of withdrawal having been exercised. All of this will be recorded in the blockchain technology: identifying the digital vehicle affected and the bidder in the transaction.

There will be cases in which it may be in the interest of the operator that has launched this new online auction business line in the metaverse to provide for certain additional safeguards in the smart contracts, so that the launch of the auction can be aborted in very exceptional cases. For example, considering the exceptional situation of the current semiconductor crisis and the possible lack of stock due to the Ukraine-Russia crisis that may affect certain automotive brands and may cause significant delays in the delivery of vehicles. In these cases, a self-destruct code could be included in the Smart contracts, if the vehicles offered at auction cannot arrive and be delivered within the established timeframe and the basic purpose is definitively frustrated at that moment (to be resumed at a later date). In this case, the smart contract could be configured to provide for "self destruct" codes if the vehicles are not delivered within a pre-determined period of time.

On occasions, such as this one, it may be necessary for certain circumstances of the self-executing code to be verified by an "oracle" or independent third party to verify compliance with requirements. On the other hand, it should not be forgotten that, regardless of whether it is articulated by means of a smart contract, there is a legal relationship between the parties and therefore the requirements of contractual validity must be verified beforehand. Therefore, the smart contract should restrict access only to entities or persons who are properly registered, and not by means of mere pseudonyms, so that it is verifiable that there is no impediment to contracting (i.e. age, disqualification or false identity). The oracle can play an important role in this sense to speed up transactions, and digital identity

standards are also currently being prepared for the automotive sector (as we will see in section 2 below), which will require prior verification and certification (digital passport) of the various agents in order to operate securely in the metaverse.

The contractual relationship will be formalised in an online contract that will have to make a reference to the smart contract designed for the auction, in addition to taking into consideration the legal aspects that must already be taken into account for online transactions. In this regard, if the legal relationship is with consumers and users, the following should be taken into account:

1) Art. 27(1) of the Information Society Services Act (LSSI) imposes on the service provider carrying out electronic contracting activities "the obligation to make available to the recipient, and prior to initiating the contracting procedure and by means of techniques appropriate to the means of communication used, in a permanent, easy and free manner, clear, comprehensible and unequivocal information, on the following points:

   *a*) The various steps to be taken in order to conclude the contract.

   *b*) Whether the provider will file the electronic document establishing the contract and whether it will be accessible.

   *c*) The technical means at his disposal for identifying and correcting data input errors, and

   *d*) The language or languages in which the contract may be concluded".

2) The requirement of Art. 27(1)(c) LSSI makes it convenient that there is a recapitulation page, before the contract is entered into, which allows errors to be identified and corrected. To avoid such errors, information service providers are required to allow users to identify and correct errors on the recapitulation page.

3) The Consumer and User Protection Act (TRLGDCU) also requires information on certain aspects prior to the formalisation of the contract with the consumer, and the Financial Services (Distance Marketing) Act 22/2007 of 11 July will also be legislation to be taken into account with regard to the prior information to be provided to the consumer before the formalisation of the contract.

4) Art. 28 LSSI also provides for the obligation to confirm receipt of the acceptance, which may be done by sending an acknowledgement of receipt by e-mail or other equivalent means of electronic communication to the address indicated by the acceptor, within twenty-four hours of receipt of the acceptance or by confirmation, by a means equivalent to that used in the contracting, of the acceptance received as soon as the

acceptor has completed this procedure, provided that it can be filed by the addressee.

2.2. *Brand visibility in the metaverse, tokenisation of vehicles (digital assets), virtual twins and copyright/data protection*

Independently of the possibilities of commercialisation as a Marketplace with digital purchase of real products of automotive companies through the metaverse as we have seen in section 1 with the creation of their digital twins that will allow testing the product, the blockchain also allows the representation of digital assets, which will exist only in the metaverse. For example, the creation of a digital vehicle of a specific brand in the metaverse, an automotive factory or even customer experience centres of a specific automotive brand, where it will be possible to use and "feel" the vehicles or other products of the automotive sector (accessories, quality of supplies and production process), interact with other users of the brand, etc.

Each of these digital assets will be assigned a unique identifier, which differentiates it from other digital assets and can be assigned specific uses and properties. Digital assets in the metaverse that can be transferred in a blockchain ecosystem are called tokens and in this particular case may have attributes that identify it as a vehicle model of a particular brand. In these cases, the tokens or exchangeable digital assets are called NFT (non-fungible token) insofar as they are not fungible (they are unique), i.e. there are a finite number of units of a specific model of a specific brand. These digital assets, NFTs, having their own identity on the blockchain, can subsequently be traded on a Marketplace.

The blockchain will record the transactions in blocks of information with a certificate of the time at which they occurred and give information about the different transactions that have taken place in relation to that NFT. They therefore contain information about who bought the digital asset and when (i.e. the different transactions that occurred on that asset). This, which makes blockchain transactions secure and transparent transactions, could, however, pose certain problems in terms of the applicability of the data protection rights established by the European Data Protection Regulation, when the transactions are being carried out by natural persons covered by this European regulation. This is because the blockchain system, with its characteristic of indelible transactions, may not fit in correctly with the right to be forgotten and the right to have data rectified. The various existing initiatives (we will see later in this section, for example, the MOBI initiative for the automotive sector) are trying to overcome these difficulties, although it is a significant legal challenge.

Therefore, in the design of any type of marketable asset in the metaverse, each actor in the automotive sector that chooses to explore these possibilities must take into account data protection from the outset and carry out data protection impact assessments.

As we said, the Integrated Trust Network project currently being developed by MOBI - Mobility Open Blockhain

Initiative, a non-profit association of automotive manufacturers and other operators, of which GA-P, through its Fernando Pombo Foundation, has been a member since 2019 - is interesting in this regard. The association is working on the creation of a digital identity standard for digital assets related to the automotive sector, including vehicles, people, EV charging points, etc. and a system of privacy (but not anonymity) where the owner controls the use of his or her information. These digital assets will have three relevant characteristics:

— a universal translator, allowing entities to communicate and operate using a common technical language;

— an encryption system, so that no individual or organisation has access to data except with the consent of the owner/manager or data processor;

— an interconnection with the metaverse ecommerce (IoT commerce).

The European Commission is currently collaborating with MOBI on a joint pilot project to use mobiNET, a decentralised identity solution developed by MOBI, to track the CO2 emissions of 280 million vehicles. These decentralised identity mechanisms that MOBI is working on aim to pre-validate the capacity and aptitude of the different agents as independent economic agents validated for any type of transaction, while at the same time tackling the legal challenge linked to the right to privacy. In this particular use case ("mobiNET decentralised identity scalability Pilot for 280 million vehicles"), work is being carried out in relation to vehicle registration by the different national authorities of the European Union (through the creation of digital twins for vehicles), so that, through the digital twins of the vehicle and the digital passport of the owners - using decentralised identities - the registration of vehicles can be carried out while preserving aspects related to privacy and different uses can be implemented through this starting point, such as the reporting, for example, of emissions. This pilot project is expected to be completed during the first quarter of 2022.

This type of decentralised identity verification process will overcome the identity verification and contracting capacity obstacles mentioned in section 1 above, and will hopefully provide solutions - yet to be analysed - to personal data protection issues.

On the other hand, another legal aspect to be taken into account and duly protected are those related to the copyright that will be associated with all these digital assets and the protection in cases of infringement of such copyright, for which the NFT will be key.

NFTs will also allow other types of uses in the automotive industry, through the possibility of blockchain recording certain relevant data on the use of vehicles and their state of maintenance, providing the possibility of monitoring their residual value "on the spot" with a view to their sale as used vehicles. Such aspects are important for premium brands (as a partial return on the investment price with a better sale

on the second-hand market) and also for leasing operators and insurance companies that will be able to know in real time the condition and use of the vehicle, which can help adjust premiums or contributions.

In this respect, Alfa Romeo has announced the launch of the "Tonale" vehicle with a system based on NFTs and which will record for each vehicle data such as mileage, maintenance operations, repairs, changes of ownership, etc. This information will be protected by blockchain technology and will therefore be absolutely reliable and unalterable, which will increase the residual value of the vehicle in possible sales as a used vehicle.

2.3. *Security and in-vehicle access to the metaverse*

Some manufacturers have recently announced that their connected vehicles will have in-vehicle access to the metaverse from in-vehicle embedded devices.

To the extent that vehicles are now connected objects, it is a device that is more integrated into communication networks, like a mobile phone or a computer. It could therefore offer access to the metaverse from the in-vehicle display.

In these cases, safety issues are even more important, as any kind of incident could lead to consequences, failures or manipulations of the elements of the vehicle itself and seriously affect road safety.

Security in relation to systems will generally be a key issue to consider in relation to the digital assets of the metaverse. In particular, the correct management and custody of the access keys to the wallets that store the NFTs is critical to avoid identity theft or other types of cybercrime that could be committed in connection with the destruction or manipulation of digital assets or digital twins. To the extent that blockchain networks are decentralised, it is impossible to recover a lost key, and there is a significant risk of loss of access to the NFT and its stored data. All this could result in significant compensation, which will make it necessary to establish systems to warn those potentially affected and exclude liability in these cases, as well as to exercise extreme diligence to ensure the security of the systems as far as possible.