Digital Fitness Check

Towards a digitized smart and adaptive legislative framework

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Management summary

The Bundesinnungsverband represents the car workshops in Germany, where the impact of the technical evolution in the field of Digitalisation for an increasingly connected and autonomous vehicle, digital services and digitized parts is felt directly by workshop operators and consumers.

We as an association followed the legislative processes to regulate the increasing level of Digitalisation over the last decade and contributed on national level as well as via our representatives on the European level to legislative Acts like et al. GDPR, Digital Markets Act, Digital Service Act or the Data Act.

While this was also for us a useful exercise to properly investigate the risks and chances of new technology and evolving new business models, it resulted in a set of dedicated and specialized legislative acts that by nature increased the risk of contradictions with existing proven legislation. This effect was amplified also in our sector by the increasing penetration and influence of digital means on existing subjects and roles in legislation. As an example, the vehicle manufacturer, that in the past had only the role of manufacturing the vehicle in the first place, was enabled by digital means like remote analysis to also act as an aftermarket remote service provider. Spare parts have become increasingly either smart (featuring on part software elements that communicate with the encompassing car IT) or are supervised by on-board car IT, leading to the effect that an increasing portfolio share of parts can only be installed in the car when they are authorized/approved by the vehicle manufacturer. As a result, a tighter cooperation between vehicle manufacturers and all other actors - that can be also competitors for OEM or OEM network offers - in the value chain is required simply due to technical reasons over the lifetime of the vehicle.

To legislate and effectively control the needed and desired cooperation and competition for a highly competitive European automotive ecosystem, we fully support the approach of upgrading and revising existing and proven legislation to technical progress in the field of digitalisation using the insights and learnings expressed in the dedicated digital acts.

By integrating the digital learnings in existing legislation rather than extending the set of dedicated digital acts the proven best practises in the existing legislative acts and the coherence between them is preserved, while this “digitized” legislation remains future proof.

As a promising example for this approach the actors in the automotive sector updated in a common exercise the Annex X of legislation 858 to technical progress with detailed provisions accounting for e.g. cybersecurity issues and new processes for the development of diagnostic tools in new modes of coopetition.

To generalize this approach of Digital “Meta-Legislation” we suggest the following key aspects and initial ideas:

A higher degree of abstraction and generalization in existing legislation, amended by a Digital Annex that can be more easily and more often to reflect technical progress in detail.

A set of Key Performance Indicators for every legislation that has to be reported in electronic format to commission operated servers enabling the commission to track the effectiveness of legislation in real time and be able to react on deviations by e.g. updating the Digital Annexes.

Reporting must be fully automated via tool integration, eliminating any need for manual reporting effort by human operators whilst achieving high degrees of accuracy and trust.

Summing up, the digital acts and responsible DGs should be used as “training materials” and “trainers” to create a sound set of smarter, more adaptive and more resilient existing and proven acts.

Introduction

In the last decade, a set of new legislative acts where developed that addressed the new risks, threats, chances and business models that were enabled or fostered by technical progress in the product and services offered not only, but predominantly by big tech companies like Amazon, Google or Apple.

Increasing use or in some instances misuse of personal data by those tech companies resulted in a revision of the GDPR regulation in 2016, the perception of “Data as the new oil” or “Data driven business models” was at least one driver between the new Data Act.

The characteristic of digital ecosystems to be potentially very large in scale and reach due to the low costs of information transfer created in some areas the typical oligopoly situations, where just few companies dominated the markets for smart phones, social networks, operating systems or other platforms. The rather disproportionate relation between the few but huge platform providers and the in comparison rather small provider companies that developed services like apps for these platforms was one motivation behind the Digital Markets Act that should ensure a fair and level playing field between the big gatekeeper companies and their partners.

As of today, these new set of legislative acts dedicated to digital innovation and progress have emerged alongside the existing regulations in the automotive sector like the Type Approval or block exemption regulation that have successfully ensured safety & environmental compliance as well as innovation and competition for decades.

Since also the adoptions to technical progress of the existing legislations hasn’t stopped during the year long development of the new digital acts the risk for contradicting provisions has risen significantly.

This position paper outlines a new approach to tackle this issue taking into account the latest technical and commercial evolutions in the field as well as experiences from recent legislative actions like the revision of Annex X from 858.

Technical & commercial evolutions in the automotive sector caused by Digitalization

In the previous years, the question of a competitive and digitally fit European automotive sector was often reduced to the question of "Access to vehicle data". Maybe motivated by the notion of data being the new oil and the foundation of flourishing data driven business models, stakeholder and commission members alike discussed the extent of needed data points, the data quality and evaluated solutions like Data Marketplaces, Data Trustees or Data Spaces.

Assessing it from a commercial aspect as of today, most of these concepts have either failed or underperformed. Prominent Data Marketplace companies have either ceased to exist or were sold at discounted prices. Data Spaces needed large amounts of public funding and have yet to prove their relevance for B2B-business.

The idea of apps in the car, developed e.g. by independent workshop concepts that would sit alongside the applications of the vehicle manufacturer in the dashboard, conduct remote diagnostics of car needs and steer the car to the workshops of the concept holder, has not yet received the attention nor developed the intended impact.

This was caused on the one hand by a high reluctance of OEMs to allow the development of these applications and integrate them into their software ecosystem, on the other hand – and potentially far more influential – there was just no business pressure in the last years for aftermarket companies. High prices for new cars promoted a longer lifetime for older vehicles with higher service needs, leading to record figures in workshop utilizations and margins for working hours and spare parts alike.

But in the meantime, two digital trends have emerged that influence directly these two core elements of service provisioning for the connected vehicle over the whole lifetime:

1.) Total control of the OEM of every service type supplied to or for the vehicle.
2.) Total control of every operator that provided services to the vehicle.

Uncontrolled and unchecked, these trends can lead to disastrous effects for the competitiveness of the European automotive sector.

Total OEM control of every service type

The advent of more and more It technology (computers, sensors, software) inside and outside the connected vehicle enable, sometimes force an OEM to control and monitor every service provided to the car to ensure the overall functionality as well as the cyber security.

The term "service" is chosen intentionally on a rather abstract level and should encompass:

a.) Smart parts, e.g. intelligent headlights with in-part software
b.) In-Vehicle apps and ECUs
c.) Diagnostic tools that feature software on external hardware that can be connected to the car via e.g. cable, Bluetooth or remote connection.

In all of these cases the included software element has to be constantly monitored and updated/upgraded within the OEMS software management systems in according with UNECE 155/156 to properly communicate with the in-vehicle ECUs in a cybersecure way.

The list of digital or digitized service types must be extended by a fourth group of parts: the digitally observable “dumb” part.

An engine control management system is able to measure the performance and a possible exchange of a “dumb” air filter in the same way that an ABS-System can detect deteriorating performance and a possible exchange of a brake pad or brake disc. In combination with the OEM backend systems and a rigid regime of issuing OEM-Acceptance identifiers only for OEM-authorized parts an OEM is then in a technical position to only allow the use of OEM authorized parts and/or operate “unknown” parts not with the full OEM performance but only within the legally prescribed limits. As an example, the mandated braking performance in Germany is around 0.5g, while advanced cars can easily achieve 0.8g or more.

Total OEM control of every operator

Starting with the SERMI-scheme for theft and security relevant operations and parts, the need for identification has expanded for reasons of cybersecurity and liability so that basically the identity and the qualifications of an operator conducting a service operation – performing a diagnosis via an external tool, exchanging a part, calibrating parts, updating software - can be logged and monitored by the OEM.

Commercial effects of the technical trends

Evaluating aftermarket software systems of parts distributors and workshop systems it can be witnessed that for an increasing share of the parts, tools and app portfolio only the OEM-solution or the solution of the first equipment supplier is available, leading to lesser innovation, less competition for the automotive sector and higher prices for consumers.

Proposed way forward: Digitized legislation

Following the trend that more and more digital influence can be witnessed in the known elements of the automotive sector we suggest that in a similar way the insights and lessons learned expressed in the dedicated digital acts should be incorporated in the existing and proven legislations for the sector, e.g. the bundle of “Type Approval” and “Motor Vehicle Block Exemption” regulation.

Together with digital measures like the usage of Digital Annexes or a mandatory fully automated reporting system this “deep integration” would result in a very sound, cohesive and nevertheless resilient set of legal acts that can form the basis of an effective real time control for the legislator on the performance of the set of acts and provisions in the field.

Lessons from the first exercise: The Annex X update to technical progress

A first step in the direction of a “deep integration” of digital aspects and a valuable learning exercise was the update of Annex X to technical progress via a series of 4 party talks between members of the commission, the vehicle manufacturers, parts suppliers and aftermarket providers.

The partners discussed all relevant 4 dimensions of successful digitalisation:

a.) Dimension legal: E.g. who has the right to develop diagnostic tools? What responsibilities, rights and roles and qualifications are mandated over the lifecycle of the tool?
b.) Dimension commercial: What – if any – commercial considerations/guidance on B2B contracts should be set, e.g. the FRAND principle for Fair, reasonable and non-discriminating pricing.
c.) Dimension technology (functions, resources): What interfaces inside and outside the vehicle may be used to develop competing aftermarket services?
d.) Dimension processes and data: What processes had to be followed over the lifetime of an aftermarket solution, what data has to be revealed by whom in the course of the interactions?

The group also introduced a first step into mandatory reporting of some provisions to authorities, when the availabilities of servers used for OEM network access and those used for IAM network access should be reported to ensure equal performance for a level playing field.

A reflection on the Data Act during the Annex X exercise

It is worth noting that the sequence, in which the group addressed the digital challenges, seemed to have been a key success factor, because it followed normal business best practices, in which first a contractual framework including confidentiality clauses is set up, the common business model is set up and only after this the enabling technology is used to trigger functions and exchange data between known partners with clear rights & roles obligations along precisely defined processes.

In our assessment the data act might have a rather limited effect on B2B because here the order of events is rather reversed. Partners are supposed to exchange potentially sensitive or confidential information upfront without a knowledge about the intended usage. A write access, needed for any kind of service provisioning is not defined, neither is a necessary integration of the developed IAM services in the software update management systems of the OEM.

Concluding the benefits of the data act can be seen primarily in the right of authorities to mandate a certain level of reporting, so in the field of business 2 authorities relation, rather than on a B2B level.

Principles for digitized legislation

The following list is non-exhaustive and should serve as a food for thought to develop a new set of digitized and smart regulations.

Principle A: Digital Annexes

The technical development is often faster than provisions in regulations can be updated, as can be seen in the example of the eCall-Regulation, where the defined 2G networks are shut down and moved to 3G+ networks, leaving millions of cars without this safety functionality.

By means of Digital Annexes the regulations can remain rather general and thus future proof, while the needed technical or even commercial details can be described in Digital Annexes that can be updated e.g. on a yearly basis.

Principle 2: Key Performance Indicators for every legislation

Any legislation has one or more purposes and in the digital age it is possible and useful to monitor the effectiveness of the legislation in respect to the purposes by defining a set of key performance indicators. If the aim of block exemption is e.g. competition, possible KPIs could measure the share and volumes of service provisions and available service alternatives for IAM as well as OEM offers.

Principle 3: Fully automated real time reporting

To lessen the administrative burden for parties affected by a legislation, every needed reporting to authorities should be fully automated and directed towards servers under the control of the authorities. This way, the obligation to report e.g. the KPIs for IAM and OEM shares become just a requirement for any software developer for workshop or parts distributor solutions. Not only does this approach frees the parties from manual efforts, it also ensures real time and trustworthy reporting.

Principle 4: Digitized legislation as a digital control task

Bringing the principles 1-3 together they allow the legislator to really act as an effective controller of very large digital and/or digitized ecosystems like the European automotive sector or the area of autonomous driving on European roads.

Instead of the usual revisions of regulations after x years by means of stakeholder interviews or consultancy studies, the commission can track the performance and effectiveness of the smart new legislations on the dashboards of the authority servers. Should the KPI grahs give reason to adjust some parameters via updates to the digital annexes and thus bring the controlled system back on track.

Summary

We as Bundesinnungsverband highly welcome the activities in the Omnibus packages and would like to explain and contribute the ideas and concepts of this paper in the upcoming activities of the commission on this matter.

Using the analogy of personal fitness we really recommend using the existing digital provisions as training plans and the expertise from the DGs responsible for those provisions as trainers to incorporate as much digital know how and possibilities in existing and proven regulations as deep as possible.

In the analogy, getting fit as an individuum also requires the student to really follow the training regime, to really listen to the trainers and at best incorporate the principles in his daily life. Just revising the training plans and exchanging trainers without ever entering the gym and exercising according to plan usually is of limited effect.