Parts identification survey

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Executive Summary

In the light of the European Commission's proposal to revise the legal framework and consolidate all relevant repair- and maintenance regulations[1], Ricardo has carried out a **comprehensive survey with independent aftermarket (IAM) participants** involved in the provision of independent spare parts catalogues, repair and diagnostic support and spare parts programs.

167 spare parts manufacturers, wholesalers and catalogue providers across Europe were consulted through an online survey. **The study focused on these stakeholder groups as they are at the heart of the parts identification process**. Repairers or workshops were consciously not included in the survey. As users they benefit from available RMI information databases and spare parts, but they are not involved in the development of these.

In line with a study carried out by Ricardo for the European Commission in 2014[2] and the Commission's report on the topic in 2016[3], **the survey highlighted that an accurate parts identification is the most important feature for workshops when ordering spare parts**, and **access to complete and unequivocal parts identification information is needed** to ensure fair competition.

The analysis showed that on average, **around 10% of parts among incoming orders during the past 12 months were not unequivocally identifiable, predominantly due to the lack of access to unequivocal parts identification information**. The accurate identification of parts/vehicles is; however, by far the most important feature for their workshop clients when ordering spare parts. **The inability to unequivocally identify parts results in additional burdens** in the form of supplementary search and orders of several parts in several catalogue systems and return of unwanted ones, **as well as loss of business to other providers**, mainly to Original Equipment Manufacturers (OEMs). **85% of all respondents stated that they experienced multiple or wrong deliveries** due to insufficient or inadequate identification, which has led to an **increase in the total cost of running the business of 11% on average**.

In the **large majority of cases the information shared by OEMs with the IAM participants has to be manually compiled for their catalogues on a one-to-one basis**, resulting in significant time spent for complete review/update of their catalogues. **None of the respondents could report that the shared information included a full set of Vehicle Identification Numbers (VINs) and related OE part numbers** to ensure unequivocal parts identification.

The **large majority of the respondents (>70%) expect the issues around parts identification and the development of IAM catalogues to worsen over the next 5 years** mainly due to the increase in complexity of vehicles and the lack of parts identification information provided by OEMs.

In summary the survey highlighted that the **most important factors to ensure the competitiveness of the IAM participants** are thus:

- **Access to complete and unequivocal parts identification information**
- **Information in machine readable and electronically processable format**
- **Information that includes full range of VINs (17-digit code) per OEM brand and all related OE part numbers**.

[1] COM(2016) 31 final

[2] https://publications.europa.eu/en/publication-detail/-/publication/c2c172a5-3f49-4644-b5bb-c508d7532e4a

[3] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016DC0782

1 Introduction

1.1 Policy background

Under Regulation (EC) No 715/2007 (vehicle type-approval Regulation), vehicle manufactures are required to provide unrestricted and standardised access to vehicle repair and maintenance information (RMI) to independent operators. In 2014, the European Commission commissioned a study on the operation of the system of access to vehicle RMI[4]. Subsequently, following Article 9 of the Regulation, the Commission submitted a report to the European Parliament and the Council[5], along with recommendations for improvement of the RMI provisions.

In 2016, the European Commission submitted a proposal to the European Parliament and the Council on the approval and market surveillance of motor vehicles and their trailers, and of system, components and separate technical units intended for such vehicles[6]. The aim of the proposal, amongst other things, is to revise the legal framework and consolidate the RMI provisions.

1.2 Study objective and approach

Ricardo were commissioned by the European Association of Automotive Suppliers (CLEPA) and the International Federation of Independent Automotive Aftermarket Distributors (FIGIEFA) to develop and run an online survey. The objective was to gain an up-to-date view of the operation of the system of access to RMI, particularly regarding to parts identification for the development of independent multi-brand spare parts catalogues.

The survey was addressed to independent aftermarket (IAM) participants involved in the provision of independent spare parts catalogues, repair and diagnostic support and spare parts programs. This included spare parts manufacturers, wholesalers and catalogue providers (hereinafter 'IAM participants'). Repairers or workshops were consciously not included in the survey. As users they benefit from available RMI information databases and spare parts, but they are not involved in the development of these.

The survey was made available in English and French from 26th June to 26th July 2017 via the online portal EU Survey[7]. The survey link was distributed by CLEPA and FIGIEFA, either directly or through national level associations.

This report provides the results from the survey. Section 2.1 provides an overview of the respondents, Section 2.2 provides an overview of the access to unequivocal parts identification information, and Section 2.3 is targeted for IAM catalogue developers and looks at functionality of technical information for the development of spare parts catalogues. Section 3 provides overall conclusions.

[4] [4] Ricardo-AEA (2014), "Study on the operation of the system of Access to vehicle repair and maintenance information", available at: https://publications.europa.eu/en/publication-detail/-/publication/c2c172a5-3f49-4644-b5bb-c508d7532e4a

[5] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016DC0782

[6] COM(2016) 31 final

[7] https://ec.europa.eu/eusurvey/home/welcome

2 Survey analysis

2.1 Background information on respondents

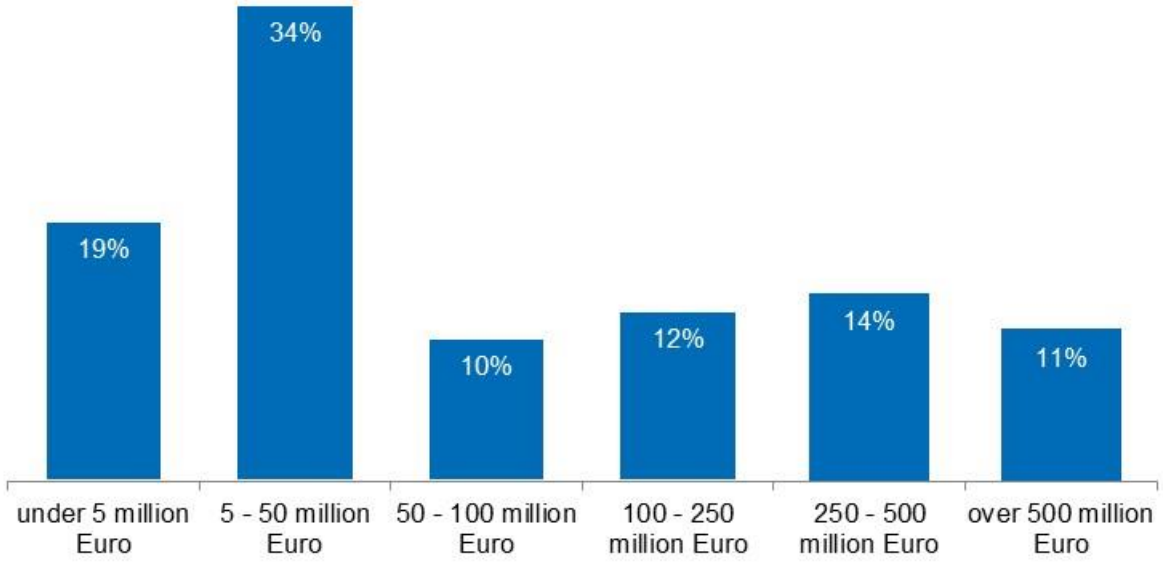
Overall, 167 responses were received, with good representation across parts wholesalers, manufacturers and catalogue providers (see Table 2-1). The 10% of respondents that selected the "other" category included workshops and associations. Since the IAM participants can specialise in multiple categories, respondents were able to select multiple answers and were counted accordingly.

Table 2-1 Responses by stakeholder category

Stakeholder category	Percentage
Parts wholesaler	42%
Parts manufacturer	38%
Catalogue provider	10%
Other	10%

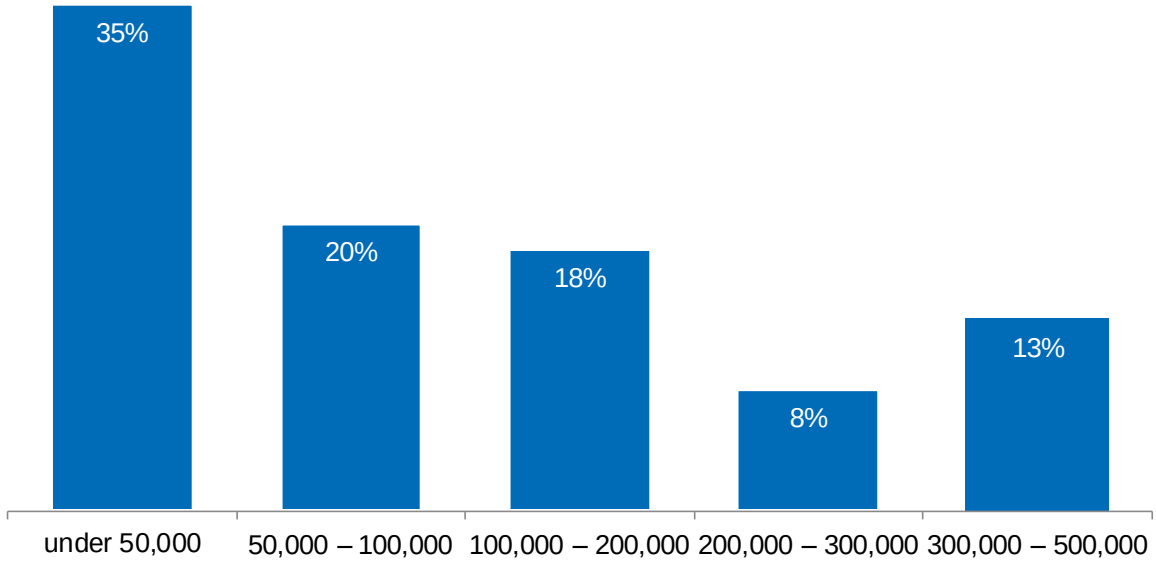
The majority of respondents (53%) had an annual turnover less than 50 million Euros (see Figure 2-1), showing that the sample had a good representation of companies towards the smaller end of the spectrum. The remaining respondents were are almost equally split among larger company sizes (annual turnover from 50 million to over 500 million Euro).

Figure 2-1 Split of respondents by annual turnover in aftermarket spare parts in Europe



Similarly, the largest share of companies indicated that they manage fewer than 50,000 parts (35%), again showing the strong representation of smaller companies (see Figure 2-2). At the same time, the remaining respondents were well-distributed over the larger size categories. In terms of product specialisation, the companies were rather evenly split among different product categories.

Figure 2-2 Number of spare parts managed for independent aftermarket business



The results of the survey can therefore provide views of a wide range of the IAM participants, ranging from SMEs to larger aftermarket stakeholders with different product specialisations.

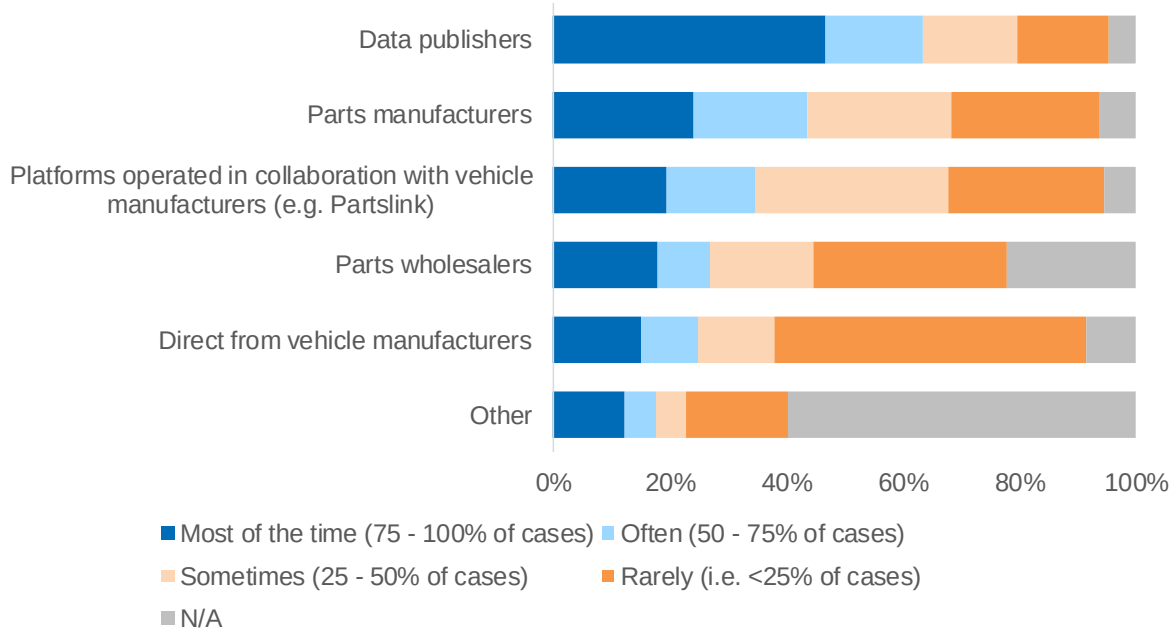
2.2 Unequivocal parts identification

Figure 2-3 shows that the IAM participants use a range of different sources to identify the spare parts. Reliance on data/information from other independent providers is clearly the highest, whereas accessing data directly from original equipment manufacturers (OEMs) is the least frequently used option. However, platforms operated in collaboration with vehicle manufacturers were used more often, with 35% of respondents indicating that they revert 'most of the time' or 'often' to these OE platforms.

Independent data publishers/catalogue providers are the preferred source of information for parts identification. This is because these providers offer an important aggregation function; i.e. they do the (costly) work of mapping/assigning parts to new vehicles/models and provide a harmonised multi-brand data structure. It would not be efficient or economically viable if each IAM participant did this work individually. As such, these independent providers create platforms that allow the IAM participants to access RMI on multiple brands at once. Even the major parts suppliers make use of the expert work of data publishers/catalogue providers (e.g. TecDoc) for the assignment of their aftermarket parts. However, these independent providers in return, have to *directly* access the respective spare parts identification information from the vehicle manufacturers. This is also true for those manufacturers and distributors who do mapping data research themselves.

Respondents commented that the data source used can depend on the type of information needed, for example, IAM parts information is received from the parts manufacturers while original equipment (OE) parts numbers are retrieved from the OEMs directly.

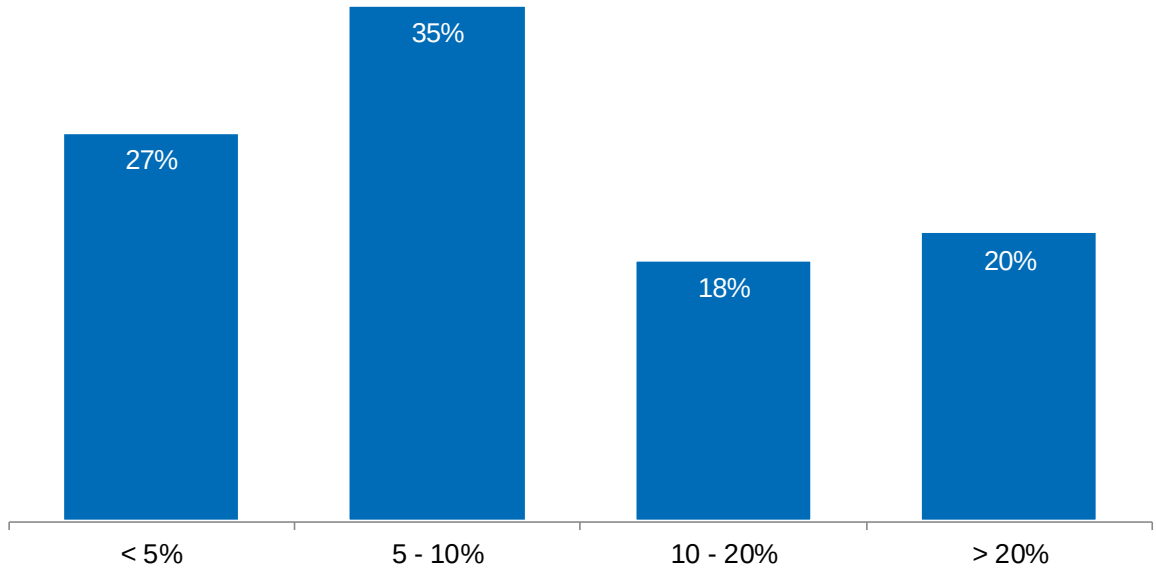
Figure 2-3 Frequency of use of different sources for parts identification



The majority of the IAM participants responded that they mainly rely on parts identification information from other independent providers, rather than accessing data directly from OEMs. Data publishers/catalogue providers are the preferred source for RMI providing a platform that allow the IAM participants to access RMI on multiple brands at once, and identify and map/assign parts to new vehicles/models in an aggregated harmonised data structure. However, these independent providers in return, have to *directly* access the respective spare parts identification information from the vehicle manufacturers.

According to the survey results, the inability to unequivocally identify spare parts continues to be an issue for parts distributors in the independent aftermarket. The respondents estimated that around 10% of parts (weighted average) among all their incoming orders during the past 12 months were not unequivocally identifiable. As shown in Figure 2-4, the calculated weighted average is based on a results profile where around 20% of respondents reported that over 20% of incoming orders could not be unequivocally identified – suggesting that unidentified parts affect a significant share of all orders.

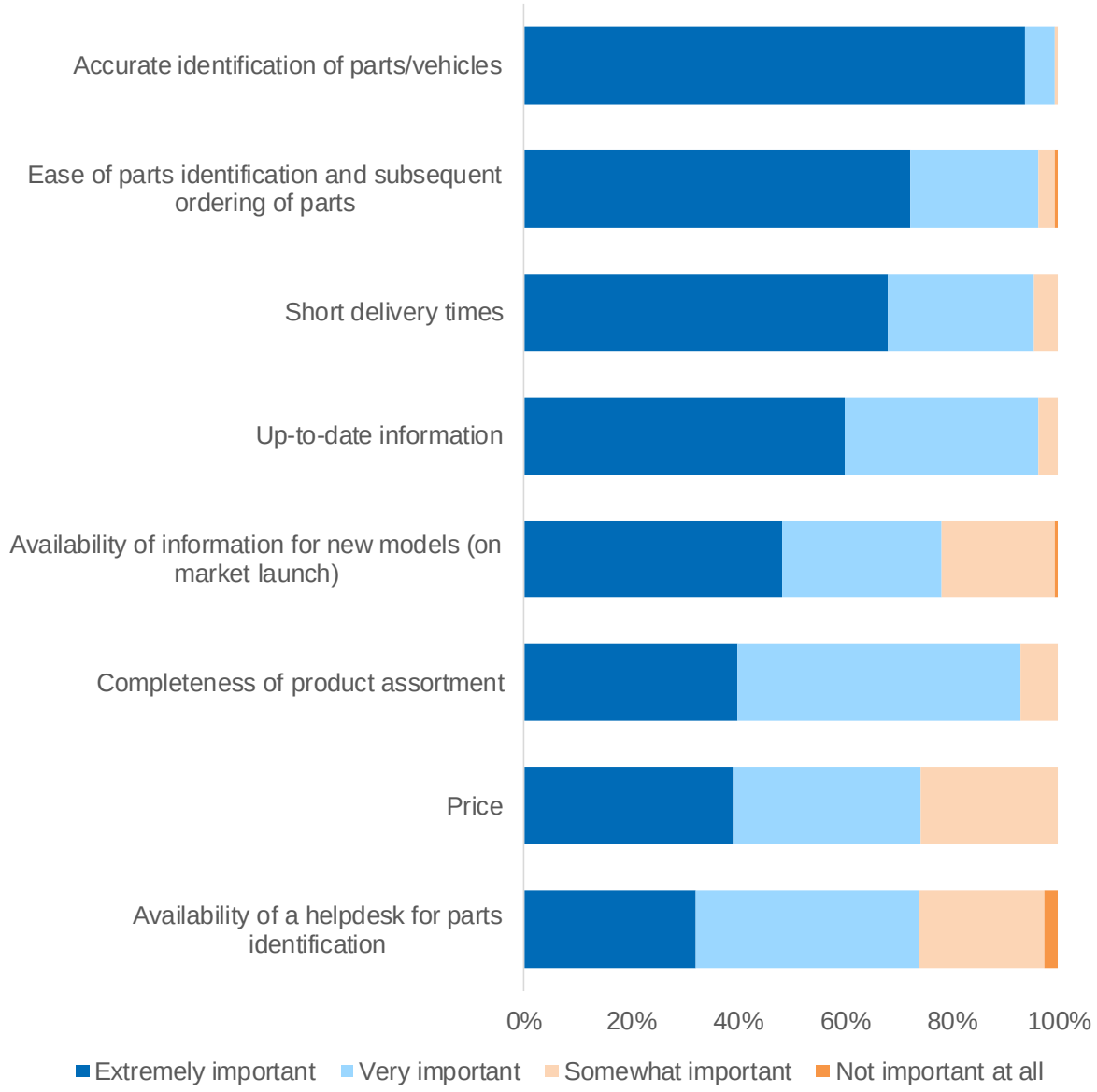
Figure 2-4 Percentage of parts not unequivocally identifiable from parts catalogue in the last 12 months



On average, around 10% of parts among incoming orders during the past 12 months were not unequivocally identifiable.

The accurate identification of parts/vehicles is considered to be by far the most important factor for workshop clients when ordering spare parts (see Figure 2-5), with 93% of the respondents considering it to be an extremely important factor for their clients. Other factors of high importance are: the ease of identification and subsequent ordering of parts, short delivery times, up-to-date information, and completeness of product assortment.

Figure 2-5 Importance of spare parts information for workshop clients



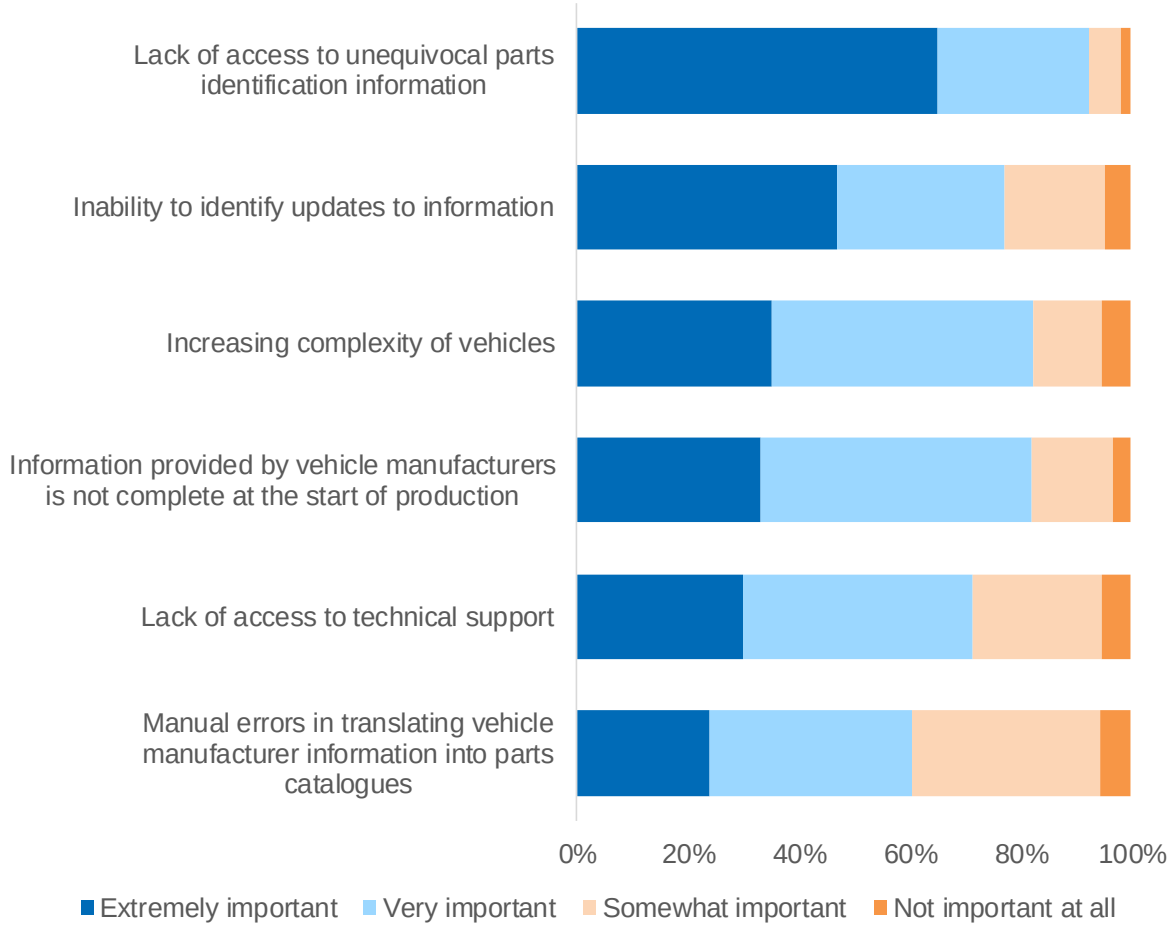
The accurate identification of parts/vehicles is considered to be by far the most important feature for workshop clients when ordering spare parts.

When the IAM participants were asked about possible reasons that contribute to any imprecisions in identifying relevant parts, the most important was reported as lack of access to unequivocal parts identification information (see Figure 2-6). 92% of respondents felt that this factor was extremely or very important. However, as highlighted in the previous review of the operation of access to RMI information[8], and by the respondents to the survey, collecting and maintaining information on vehicle model and engine type basis is not always sufficient to identify a suitable part - rather, the full (17 digit) VIN number is the only way to ensure unequivocal identification.

Other important reasons that contribute to imprecisions in identifying relevant parts as identified by respondents were: inability to identify updates to data, increasing complexity of vehicles and the information provided by the vehicle manufacturers is not complete at the start of production.

[8] https://publications.europa.eu/en/publication-detail/-/publication/c2c172a5-3f49-4644-b5bb-c508d7532e4a

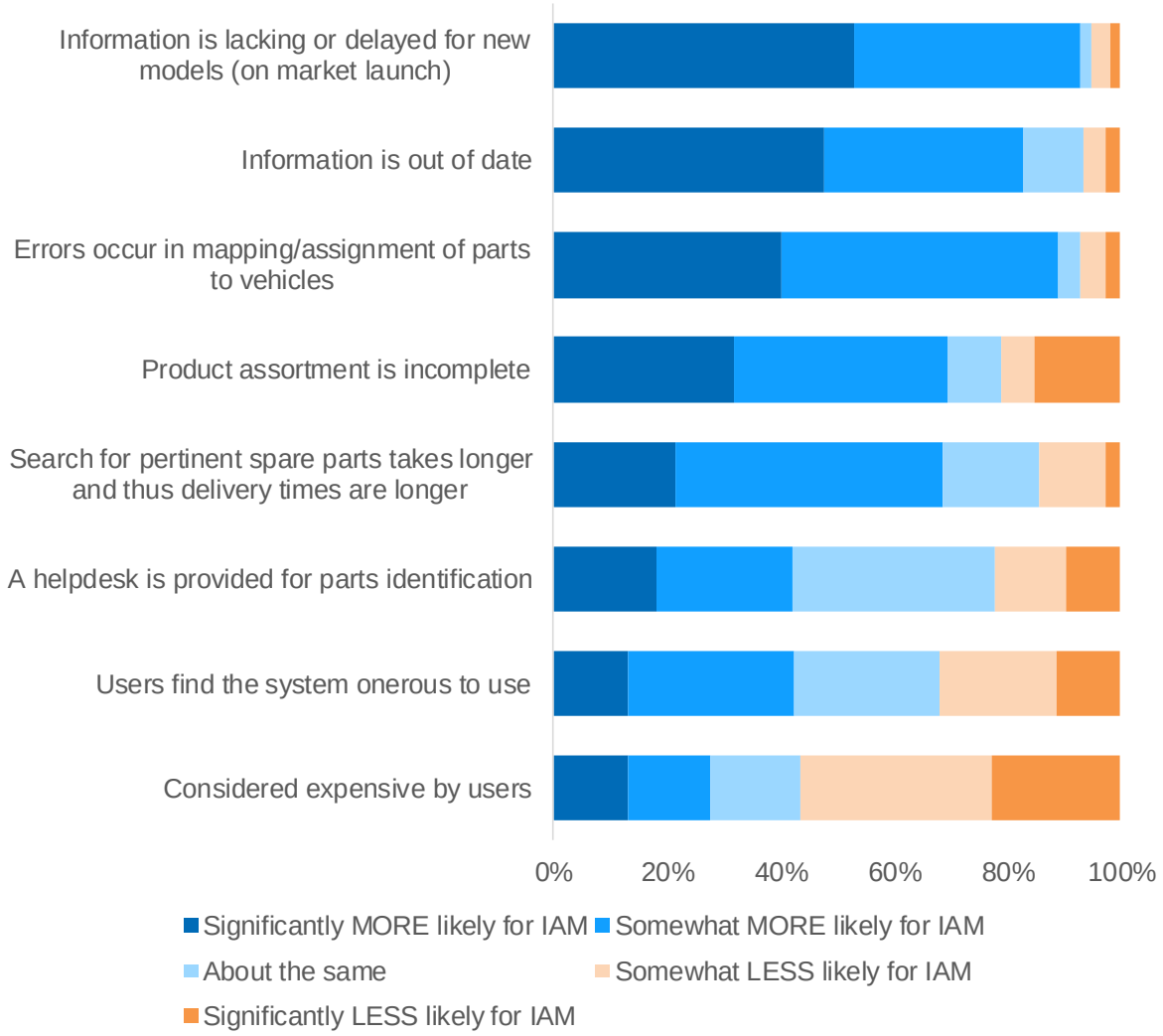
Figure 2-6 Most important reasons that contribute to any imprecisions in identifying parts



The lack of access to unequivocal parts identification information is seen as the most important reason for any imprecisions in identifying parts.

Several of the issues identified above as contributing to imprecisions in identifying parts, are likely to affect IAM spare parts catalogues more than vehicle manufacturer catalogues. For example, according to 92% the respondents, the data for new models (on market launch) is more likely to be unavailable or delayed for IAM catalogues compared to vehicle manufacturers' catalogues. Furthermore, 81% felt that information is more likely to be out of date and 87% felt that errors were more likely to occur in parts assignment (see Figure 2-7).

Figure 2-7 Issues affecting independent IAM spare parts catalogues compared to vehicle manufacturers' catalogues

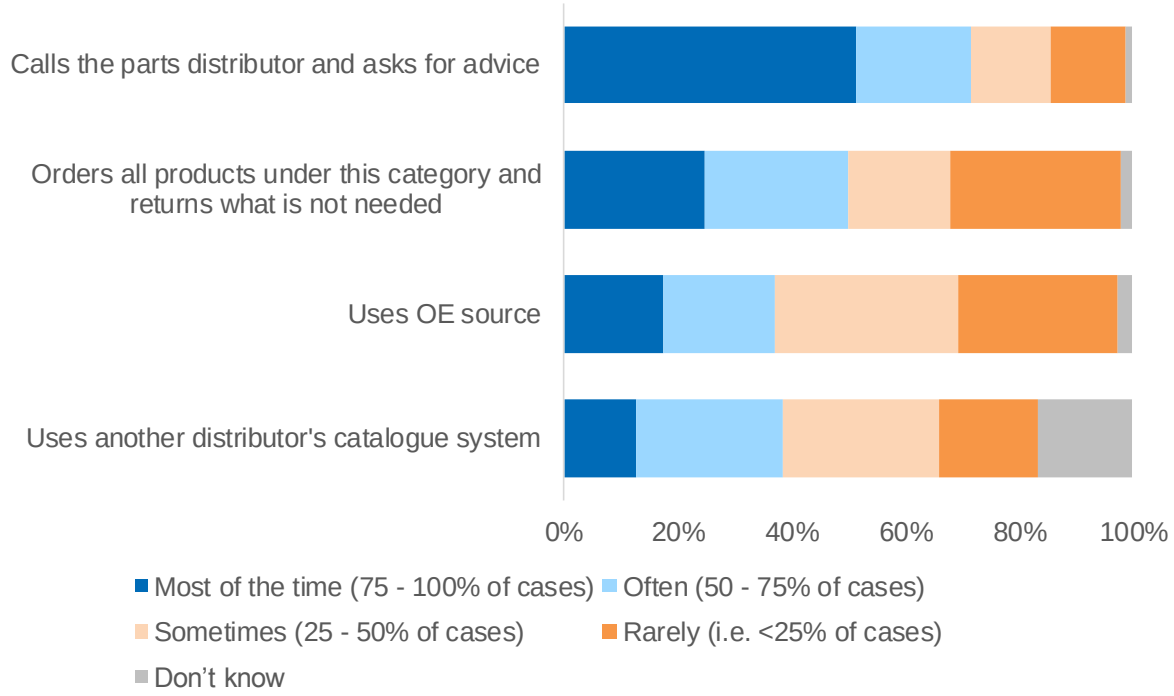


Issues that affect independent (IAM) spare parts catalogues much more than vehicle manufacturers' catalogues are:

- Lack or delay of information for new models (on market launch)
- Out-of-date information
- Errors occurring in mapping/assigning parts to vehicles

Figure 2-8 shows the different approaches taken by workshop clients – as judged by the IAM participants - when they cannot unequivocally identify spare parts. As can be seen, it is expected that the workshop is most likely to call the parts distributor for assistance; however, there are also expected to be orders of several parts and return of unwanted ones, as well as loss of business to other providers, mainly to OEMs.

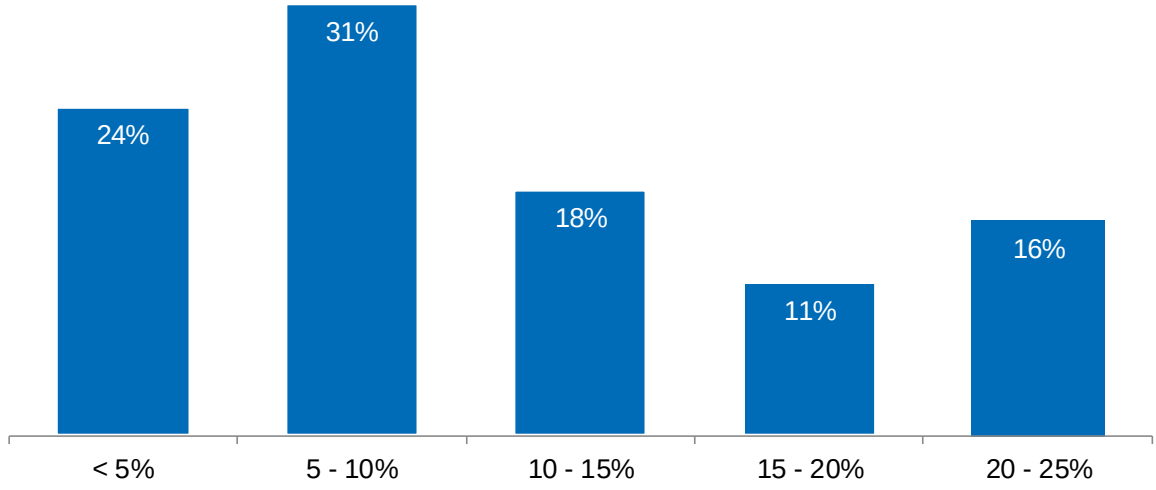
Figure 2-8 Approaches used by workshop clients when they cannot find the right part



Where workshops struggle to identify relevant parts, they are most likely to call the parts distributor for advice. However, there are also expected to be additional burdens in the form of supplementary search and orders of several parts in several catalogue systems and return of unwanted ones, as well as loss of business to other providers, mainly to OEMs.

Indeed, 85% of the respondents to the survey have experienced multiple or wrong deliveries due to insufficient or inadequate identification of spare parts. According to the respondents who have experienced multiple or wrong deliveries, the delivery and take-back of multiple parts increases the cost to their business on average by 11% (weighted average). A detailed response profile is presented in Figure 2-9 and shows that the largest share of responses (31%) fall into the 5 to 10% increase category.

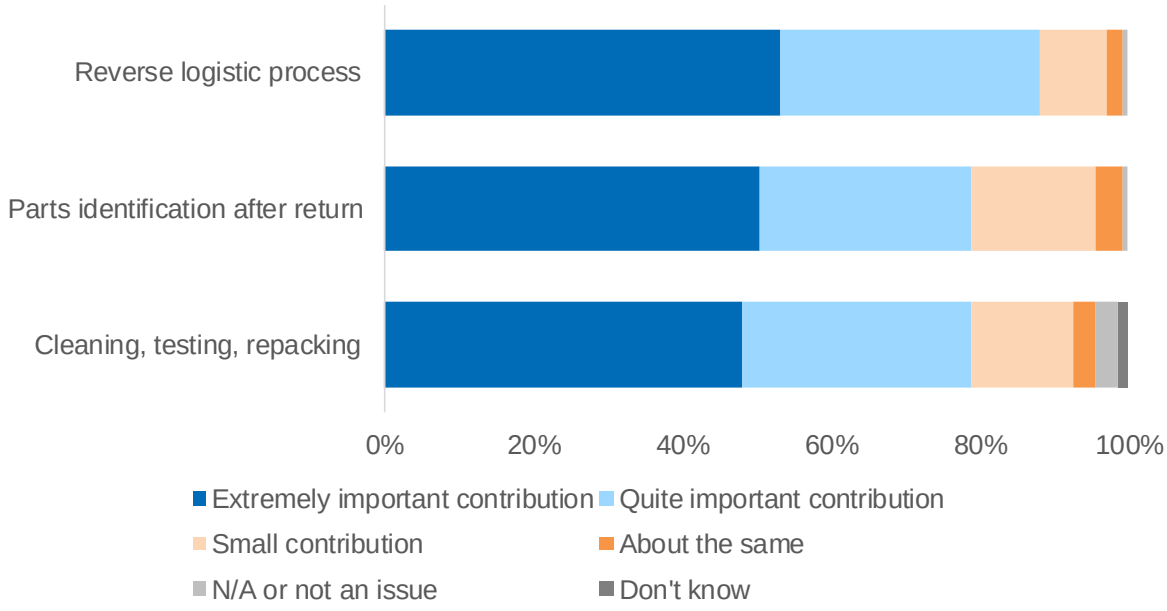
Figure 2-9 Estimated TOTAL increase in cost to businesses due to delivery and take-back of multiple parts



85% of all respondents have experienced multiple or wrong deliveries due to insufficient or inadequate identification of spare parts, which has led to an increase in the cost of running their business of 11% on average.

As shown in Figure 2-10, several factors contribute to the increased costs: the reverse logistic process, the identification of parts after the return of the unwanted parts, and the cleaning, testing and repacking of parts. All three factors are deemed to be of similar importance by the respondents. Other cost factors that were mentioned by respondents are the costs associated with safety checks of the returned spare parts, overstocking due to parts being ordered but then returned, which has a negative impact on the cash flow, double transportation costs, transaction costs, and increased warehouse capacities and additional personnel costs to handle higher movement of items.

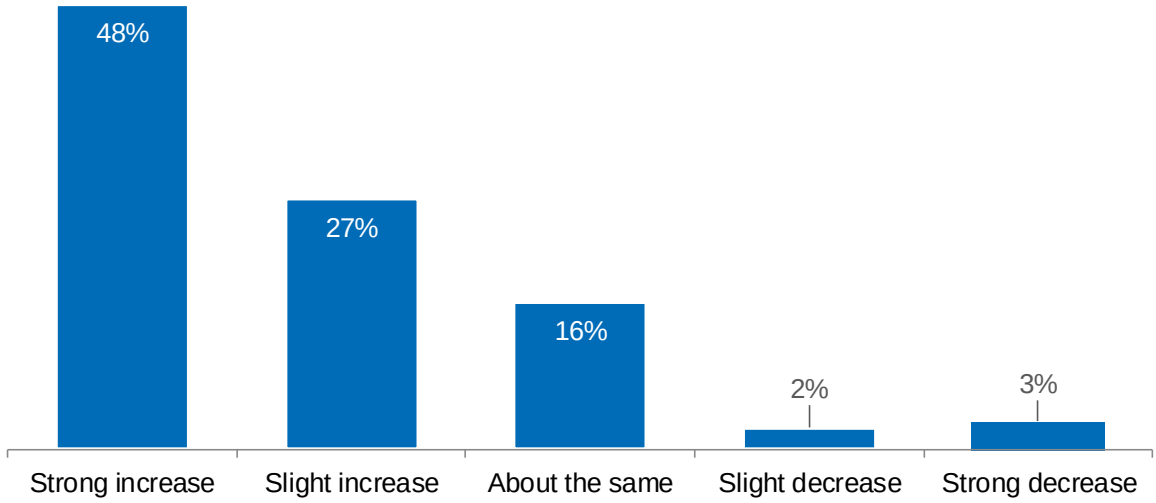
Figure 2-10 Factors contributing to increases in cost to business from the errors in parts identification



The discussion above shows that the lack of access to unequivocal parts identification information typically leads to multiple or wrong parts being identified as relevant, which in turn leads to multiple parts being ordered and return of parts not needed, consequently increasing overall costs to parts distributors' business.

Looking forward, the situation is not expected to improve. In fact, 75% of the respondents believe that the percentage of parts that cannot be unequivocally identified in IAM catalogues in the next 5 years is going to increase, with the largest share of respondents (48%) expecting a strong increase, and a further 27% respondents expecting a slight increase (see Figure 2-11). Only 5% of the respondents expected the situation to improve in the next 5 years.

Figure 2-11 Changes expected in terms of the percentage of parts that cannot be unequivocally identified in IAM catalogues in the next five years



There are two main reasons that were noted as being associated with the expected increase in the number of parts that cannot be unequivocally identified. Firstly, the processing of the data and therefore parts identification is expected to become more challenging due to increasing complexity of vehicles technology and electronics. The increased complexity is due to: digitalisation, increase in vehicle models and equipment packages on the market, and fitment diversity. Secondly, respondents were concerned about the access to information on parts identification becoming increasingly difficult. They see this being caused by the fact that OEMs are not willing to openly share vehicle related information and OE parts numbers in order to maintain a competitive advantage. To this end, some respondents expect vehicle manufacturer to deliberately change/complicate OE parts numbering system as the complexity of vehicles increases and/or block or delay update processes, and consequently weaken IAM competitiveness.

The large majority of respondents (75%) expect that the percentage of parts that cannot be unequivocally identified in IAM catalogues will increase over the next 5 years. The main reasons are:

- The increase in complexity of vehicles
- Lack of parts identification information provided by OEMs

2.3 Functionality of technical information for spare parts catalogues

In the report to the European Parliament and the Council on the operation of the system of access to vehicle RMI[9], the Commission noted that the access to (database) information, as identified by the VIN, is an important issue. It provided that the main challenge for IAM participants in compiling their spare parts catalogues is the need for manual scanning of the information.

As part of the proposed consolidation of the RMI provisions, there have been suggestions for an amendment of the RMI provisions that the parts identification information shall be provided by the OEMs in a machine readable and electronically processable format.

The survey therefore looked at how the technical information currently functions for the IAM participants for the development of IAM spare parts catalogues, and how important the IAM participants consider the availability of the information to be for their ability to compete. There were 64 respondents to the part of the survey aimed at stakeholders that develop IAM spare parts catalogues.

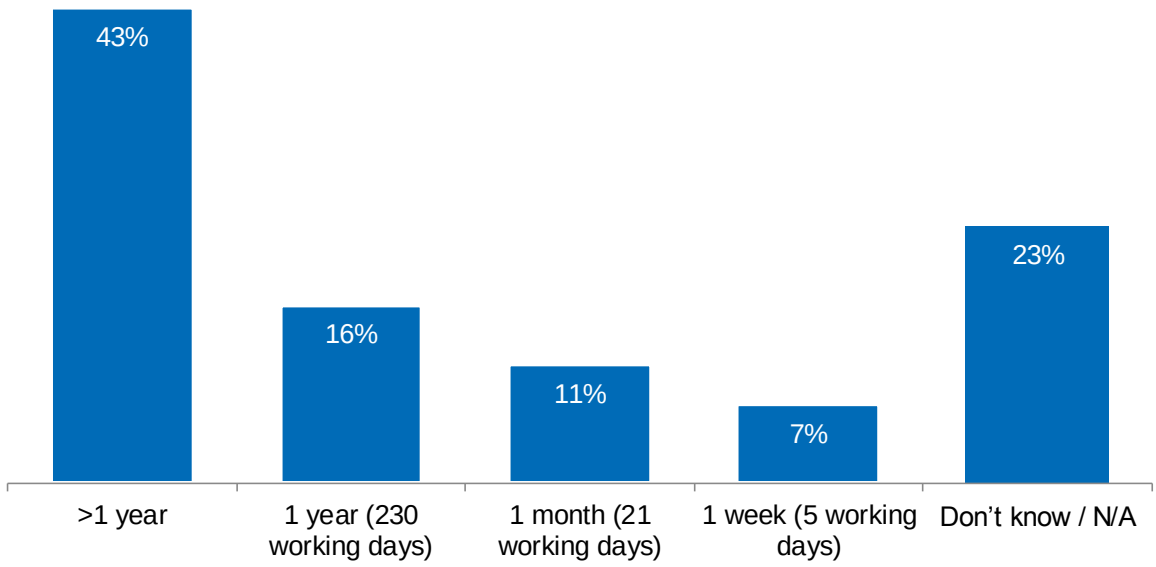
The vast majority of respondents (92%) indicated that the OEMs provide them with information that they then have to manually compile for their catalogues on a one-to-one basis (rather than with data in machine readable and electronically processable format). No significant differences in practices between individual vehicle manufacturers could be observed. None of the respondents reported that they had received data that includes a full set of VINs and related OE parts numbers.

In the large majority of cases OEMs provide the IAM participants with information in a format that has to be manually compiled for their catalogues on a one-to-one basis. No cases of information that include a full set of VINs and related OE part numbers were reported.

When manually compiling the information for the catalogues on a one-to-one basis, there is a significant impact for the IAM parts catalogue developers in terms of time needed to maintain a complete review/update of IAM application information in their catalogues. Namely, the largest share of respondents (43%) stated that this can take more than one year of man-days (see Figure 2-12). Looking at the responses by the type of company shows that responses for “1 week” and “1 month” were only received from organisations that manage less than 50,000 spare parts for the IAM (the lowest answer option). The majority of respondents that need one year in man-days or more for a complete review/update the number of managed spare parts is higher than 50,000 spare parts, which are in general providers of a full multi-brand catalogue for all vehicles.

[9] http://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/IMCO/AM/2017/02-09/1107325XM.pdf

Figure 2-12: Man-days are needed for a complete review/update[10] of your application information

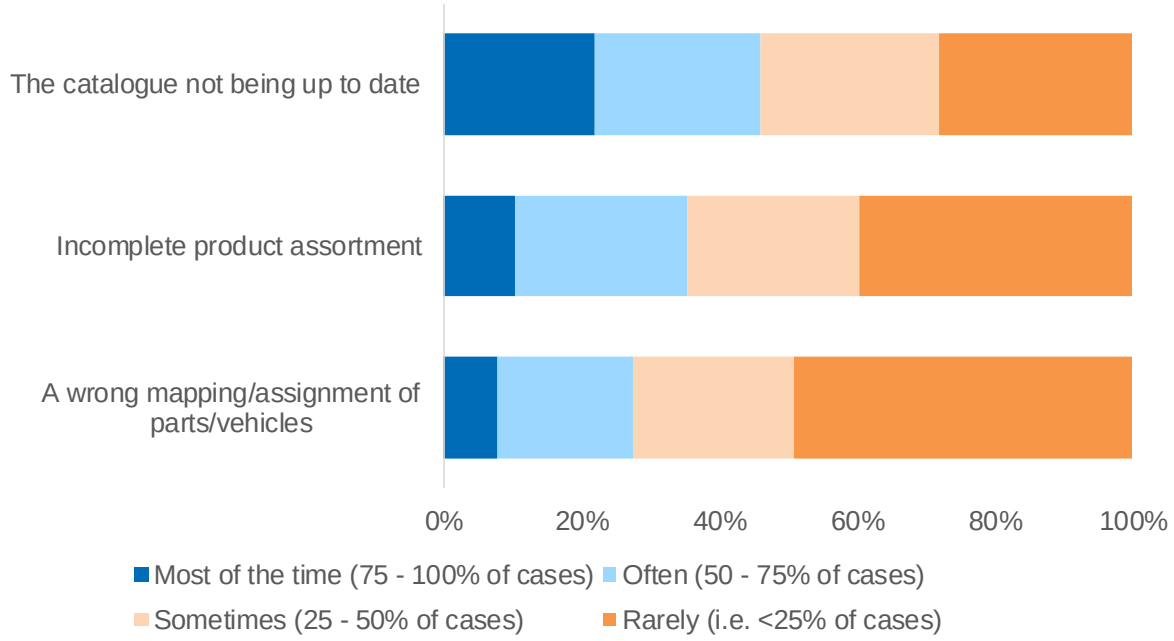


The IAM catalogue developers that manually compile information for their catalogues on a one-to-one basis, report significant time spent for complete review/ update of their catalogues.

With the large quantities of information to process and the time taken to manually compile the parts catalogues, catalogue developers reported that not being able to provide up-to-date catalogues to their customers is the most common potential failure source as a consequence of manually compiling information (46% respondents experience this often or most of the time). The respondents also reported other consequences of manually compiling information, such as incomplete product assortment and wrong mapping/assignment of parts to vehicles. While these were also important consequences, they seemed to affect the IAM spare part catalogue developers to slightly lesser extent (see Figure 2-13).

[10] i.e. manually compiling the information for spare parts catalogues on a one-to-one basis

Figure 2-13 Failure sources of manual compilation of parts catalogues/data bases



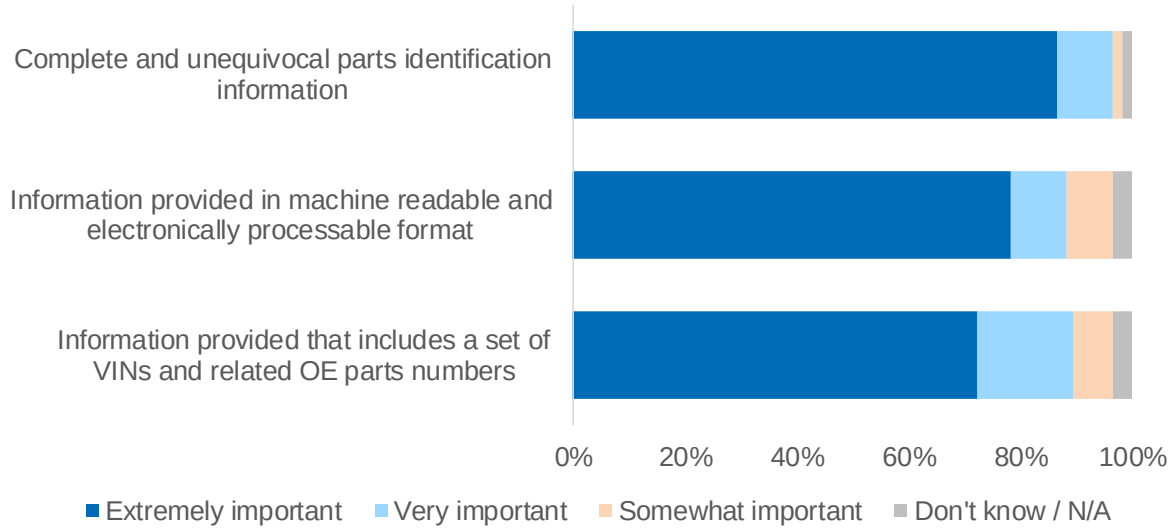
The most common failure source of manual compilation of information /data catalogues/databases is that catalogues are not up to date.

A large majority (73%) of the respondents stated that it will be either significantly or somewhat more difficult for their company to develop spare parts catalogues over the next five years. The reasons identified are very similar to those given in regard of future issues with unequivocal parts identification. On the one hand, there are expected to be increases in the technical complexity of vehicles systems and in the number of models and parts available on the market. On the other hand, there is also a common concern that in the future OEM information will be kept more restricted due to competitive reasons. These factors will make spare parts catalogue development even more challenging for IAM participants.

73% of respondents expect that it will become more difficult for their company to develop spare parts catalogues over the next five years.

It follows, as a consequence, that the IAM participants agree that access to information on vehicle parts for development of spare parts catalogues is extremely important for their ability to compete with OEMs on the spare parts aftermarket. There are three factors that are almost equally important for them in terms on increasing their ability to compete. Firstly, having access to complete and unequivocal parts identification information, secondly, information that is provided should include a set of VIN with all necessary additional qualifiers or attributes and related OE parts numbers, and thirdly, being in a machine readable electronically processable format (see Figure 2-14). Also availability of information on updates/changes made by the information supplier has been mentioned as an important factor.

Figure 2-14 Factors contributing to IAM ability to compete



3 Conclusions

This study has analysed the current operation of the access to vehicle RMI for IAM participants. The survey firstly focused on the access to unequivocal parts identification for IAM parts distributors, and then looked at the functionality of the technical information for the IAM spare parts catalogue developers.

The conclusions from the study on parts identification are as follows:

- Overall the analysis shows that there are still significant issues for IAM parts distributors associated with unequivocal parts identification. On average, around 10% of parts among incoming orders during the past 12 months were not unequivocally identifiable.
- The majority of the IAM participants responded that they mainly rely on parts identification information from other independent providers, rather than accessing data directly from OEMs. Data publishers/catalogue providers are the preferred source for RMI providing a platform that allow the IAM participants to identify spare parts on multiple brands at once, and they identify and map/assign parts to new vehicles/models in an aggregated manner. However, these independent providers in return, have to *directly* address to the vehicle manufacturer for access to the respective spare parts identification information
- The accurate identification of parts/vehicles is however by far the most important feature for their workshop clients when ordering spare parts.
- The lack of access to unequivocal parts identification is the most dominant reason for imprecisions in identifying parts.
- Issues that affect independent (IAM) spare parts catalogues much more than vehicle manufacturers' catalogues are:
    - Lack or delay of data for new models (on market launch)
    - Out-of-date information
    - Errors occurring in mapping/assigning parts to vehicles
- Where workshops struggle to identify relevant parts, they are most likely to call the parts distributor for advice. However, there are also expected to be additional burdens in the form of supplementary search and orders of several parts in several catalogue systems and return of unwanted ones, as well as loss of business to other providers, mainly to OEMs
- 85% of all respondents have experienced multiple or wrong deliveries due to insufficient or inadequate identification, which has led to an increase in the total cost of running the business of 11% on average.
- The large majority of respondents (75%) expect that the percentage of parts that cannot be unequivocally identified in IAM catalogues will increase over the next 5 years. The main reasons are:
    - The increase in complexity of vehicles
    - Lack of parts identification information provided by OEMs

The conclusions relating to the functionality of information for spare parts catalogues are as follows:

- In the large majority of cases OEMs provide the IAM participants with information in a format that has to be manually compiled for their catalogues on a one-to-one basis. No cases of information that include a full set of VINs and related OE part numbers were reported.
- The IAM catalogue developers that manually compile information for their catalogues on a one-to-one basis, report significant time spent for complete review/ update of their catalogues.
- The most common failure sources of manual compilation of data catalogues that are highlighted are catalogues not being up to date.

- Similarly, to the situation with parts identification, the large majority of IAM players expect the situation to worsen, and the development of spare parts catalogues to become more difficult over the next five years. 73% of respondents expect that it will become more difficult for their company to develop spare parts catalogues over the next five years

The most important factors, according to the survey, to increase the competitiveness of the IAM participants are thus:

- Access to complete and unequivocal parts identification information
- Information in machine readable and electronically processable format
- Information that includes full range of VINs per OEM brand and all related OE part numbers.

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