#ZF

# mobility

TREND REPORT // MAY 2017

# mobility age

With the beginning of the 19th century we entered an era we refer to as modernity and experienced an acceleration of life ever since. Groundbreaking inventions such as Trevithick's steam locomotive, Zeppelin's airship and Benz's first motor vehicle have changed human locomotion forever. Mobility has become a key driver of today's globalized economies and societies. More than 30 million people in the EU-28 have moved home in the last five years. We increasingly live in one city and work in another. Almost 70% of German households have access to more than one car. And all this is just the beginning.

**In a world, in which time is increasingly money and convenience a must, mobility has become a fundamental need.**

Today we mark the beginning of a truly multi-mobile age. Mobility turns into a shared, autonomous, electric, and connected experience. Cities become green and devices smart. Ownership isn't necessarily a prerequisite anymore. Services are the new enabler of mobility with a projected revenue of $1,500 Bn in 2030.

In order to better understand how people move today and what they expect from a mobile life in the future ZF Friedrichshafen AG carried out an online survey. This white paper is to present the main results.

**Dip into the future of mobility!**

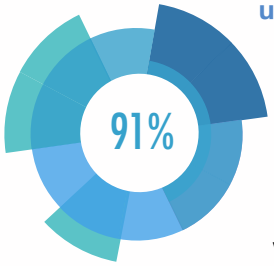
# key findings

In total, 334 surveys have been submitted, of which 241 were in English and 93 in German.

**respondents** — **75%**



The majority of respondents were male (75%), in their early 40s, European, and employed. Most held a secondary degree and generated a a higher level of income. Most respondents considered themselves as rather tech savvy.




**use their personal vehicle for commuting to work**

The vast majority of respondents has access to a car and commutes 9 hours per week, mostly for work (93%) followed by leisure (50%) and family (44%).

**82 %** **rated parking the most relevant smart mobility service**



**have used a mobility services**

A good third has made use of a mobility service before, in particular location based search (49%), maintenance (39%), and streaming (26%).


**would allow their car to pay for services autonomously**

More than half would enable cars to take care of payments preferably with an on demand payment solution via credit card (39%).

# demographic background

Out of 334 survey 75% or 250 respondents were male and from Europe (66%), mainly Germany, followed by North American territory (18%). It can be assumed that most of the respondents have some kind of automotive background or professional connection.

The majority or 88% is employed with 37% generating a yearly net income of 50-100k EUR or higher. Only 1% describes itself as a student, freelancer or entrepreneur. All of the respondents have gained a higher level of education with 94% having completed high school and 78% holding a bachelor or master degree.

The majority of respondents is consuming services and goods online and can be described as frequent online shoppers. Almost a third or 58% purchases goods 1-5 times per month, 37% even more often. Besides electronic (71%) and household goods (58%) respondents were mainly interested in multi-media products such as books (52%), movies/tv (43%), and music (40%). On a scale from 0-5 respondents considered themselves to 3.7 as tech geeks.

# mobility behaviour

In order to anticipate the future of mobility we had to better understand the status quo. It is for that reason we asked respondents to share some insights on how much they commute, what for and by which means of transport in an average week of one's everyday life.

**9 hours**

## of commuting per week

Respondents commute nine hours per week on average. Those using public or other forms of transport generally travelled twice as much as those having access to a personal vehicle.

**25 km**

## average radius of travel

Most of the respondents travel 10-25km per week (30%) on average, followed by those who commute between 25-50km (24%) and those who cover longer distances of more than 50km (21%).

**91 %**

## own a personal car

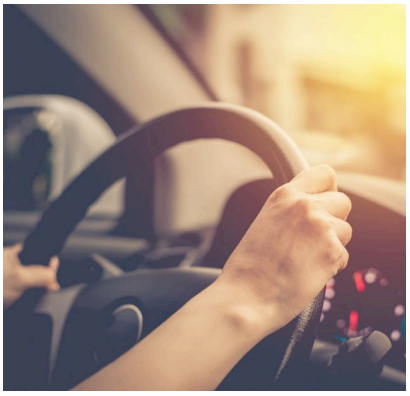
Almost every respondent has access to a personal car, which in most cases the respondent owns (82%) and in some cases uses shares as a family vehicle (4%).

**93 %**

## commute for work

Almost every respondent commutes for work, followed by private journeys for leisure purposes (50%) and family commitments (44%).

# mobility services



Almost two thirds or 74% have used one of today's in-car infotainment services before. As infotainment services we understand services that can be accessed inside the car. These include weather, email or third-party streaming services. Almost half or 49% have searched for a location, 39% made use of a maintenance service, 28% called up weather information, and 26% consumed third-party streaming services.

## 38 % have used a smart mobility service before

A good third of all respondents has used a smart mobility service before. We define a smart mobility service as some sort of intelligent service that enables or enhances a person's mobility needs.

## 63 % would like to pay on demand

Of those who would would consume smart mobility services 63% would prefer an on demand payment schedule. 12% would want to pay one-time only, only 6% via a subscription model.

## 87 % would pay for a smart mobility service

Out of these 45% would prefer a payment solution via their credit card, 27% would want to pay via PayPal, and 21% via some kind of smartphone app.

# smart mobility services

We asked respondents to rate a number of smart mobility services according to their personal relevance. The following services got the highest ratings.

## parking 4.0

A car would automatically find parking and book available parking lots.

## maintenance 3.8

A car would know when service or a spare part replacement is required.

## charging 3.6

A car would automatically fill up with energy or fuel respectively.

## toll 3.5

A car would automatically settle fees at toll stations, if and when occurring.

## in-car services 3.2

The driver would have access to in-car offerings such as smart office solutions.

## drive-dependent insurance 3.1

The driver's individual driving behaviour would determine the insurance fee.

# car eWallet

In early 2017 ZF Friedrichshafen AG, one of the world's leading automotive supplier, and Swiss bank UBS have joint forces for the development of a wallet in a car, the so-called Car eWallet. The idea is to allow cars to pay for smart mobility services autonomously, which require the driver's interaction as of today.

With that in mind, we questioned the acceptance and use of an automatic payment system. On a scale from 0 to 5 respondents were to a level of 3 willing to make use of an automatic payment system. 83% of these attached this to the the system being secure. 72% wanted it to be easy to use and 62% to save time. Only 52%, but still more than half, wanted it to be cheap.

**Two thirds of American respondents would make use of an automatic payment system in a car, whereas two thirds of European respondents would rather not allow a vehicle to pay automatically on their behalf.**

Even more interesting was the fact that, in total, 58% would allow their car to pay autonomously on their behalf. Taking into consideration respondent's origin though, we learned that those from North America were much more likely to accept such a system, whereas those from Europe, and therefore particularly from Germany, were less likely to adapt.

Out of all respondents that would allow a car to pay on their behalf, 95% would accept automatic payments for parking (95%), charging (93%), and toll (84%). Respondents that consider a service relevant to them are in most cases also willing to allow a car to settles fees involved on their behalf.

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