



open DOORS - Designing a network of cOOperating cReative communities for developing a Sharing economy

Interreg MED Programme

Priority Axis 1: Promoting Mediterranean innovation capacities to develop smart and sustainable growth

Specific objective: 1.1 To increase transnational activity of innovative clusters and networks of key sectors of the MED area

Comparative Analysis

In this document, we provide detailed comparative analysis of sharing economy (or collaborative economy as referenced by many other sources) in the involved regions and also put in evidence the difference and similarity with other European regions and, for larger scope of the analysis, we also provide some references to global sharing economy information.

Our analysis is addressing various aspects of sharing economy so we present usage analytics, legislative frameworks, socioeconomic aspects, business model aspects, country/region aspects, telecommunication and internet access aspects and other. Since sharing economy covers broad range of aspects, that are not always formally grouped, this document serves the purpose of providing good overview backed with evidence examples yet provides links to larger additional set of materials. It is also important to mention that existing surveys and analyses are being constantly updated and reader is thus encouraged to visit provided references for updates on this remarkable new economy model.

In this document, we have consulted many sources of data, comparison charts, surveys, analyses from governments, public bodies as well as industry and research entities. For all information, we used, we provide source references (in brackets[]) at the end of the document.

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Contents

1. Comparison of different general aspects of sharing economy	4
2. Comparison of sharing economy services and platforms adoption.....	18
3. Comparison of implemented sharing economy platforms and services	23
4. Comparison of legal aspects of SE in various countries.....	26
5. Technology foundations for sharing economy	36
5.1. Digital Single Market: Internet and Broadband in Member States.....	36
5.2. Use of mobile devices.....	41
6. Comparison of national strategies for internet/broadband access.....	46
6.1. Country information - Croatia	46
6.2. Country information - Slovenia.....	48
6.3. Country information - Italy.....	50
6.4. Country information - Spain	53
6.5. Country information - France.....	55
6.6. Country information - Greece.....	56
6.7. Country information - Sweden.....	57
6.8. Country information - Estonia.....	59
6.9. Country information - Germany.....	60
7. Conclusions.....	64
8. References.....	65
9. Appendix A: Collaborative economy companies founded in Europe [4].....	66

1. Comparison of different general aspects of sharing economy

The future of sharing economy in Europe is bright, with forecasts for significant growth. Yet, certain regions are expected to grow more rapidly while some others are slower in embracing this new trend. Several studies on sharing economy across Europe evidence growing importance of this novel way of doing business [1].

A prerequisite for growth is the actual wide spread knowledge on sharing economy. In the Figure 1 [1] the results of the poll to the question if people have ever heard of the sharing economy and if they have participated in it are given. SE was described to poll participants as “utilizing goods (such as a car, house or lawnmower) that would otherwise be idle or unused”. Some alternative SE names such as collaborative economy, peer-to-peer business, etc were also mentioned to people and importance of digital technology as the vehicle for growth has also been explained.

As the figure shows, there is large gap between different countries as well as between knowing about SE and using it.

The poll shows that Turkey is the leading country in both knowledge on sharing economy and its' use (at the time of the poll).

An interesting aspect of this poll is the knowledge/use of SE in MED regions. It can be seen that SE is indeed more present in MED region countries compared to other non-MED countries.

For the EU, on average, almost one third of population knows about SE and about 5% of the population is using it. In this comparison, MED region results are better. Use of SE and digital technologies in tourist related businesses that match most widely use of SE could explain this good result.

THE QUESTION

Have you ever heard of the sharing economy?

Percent who gave the below answers

■ Yes, and I have participated in it ■ Yes, but I have not participated in it

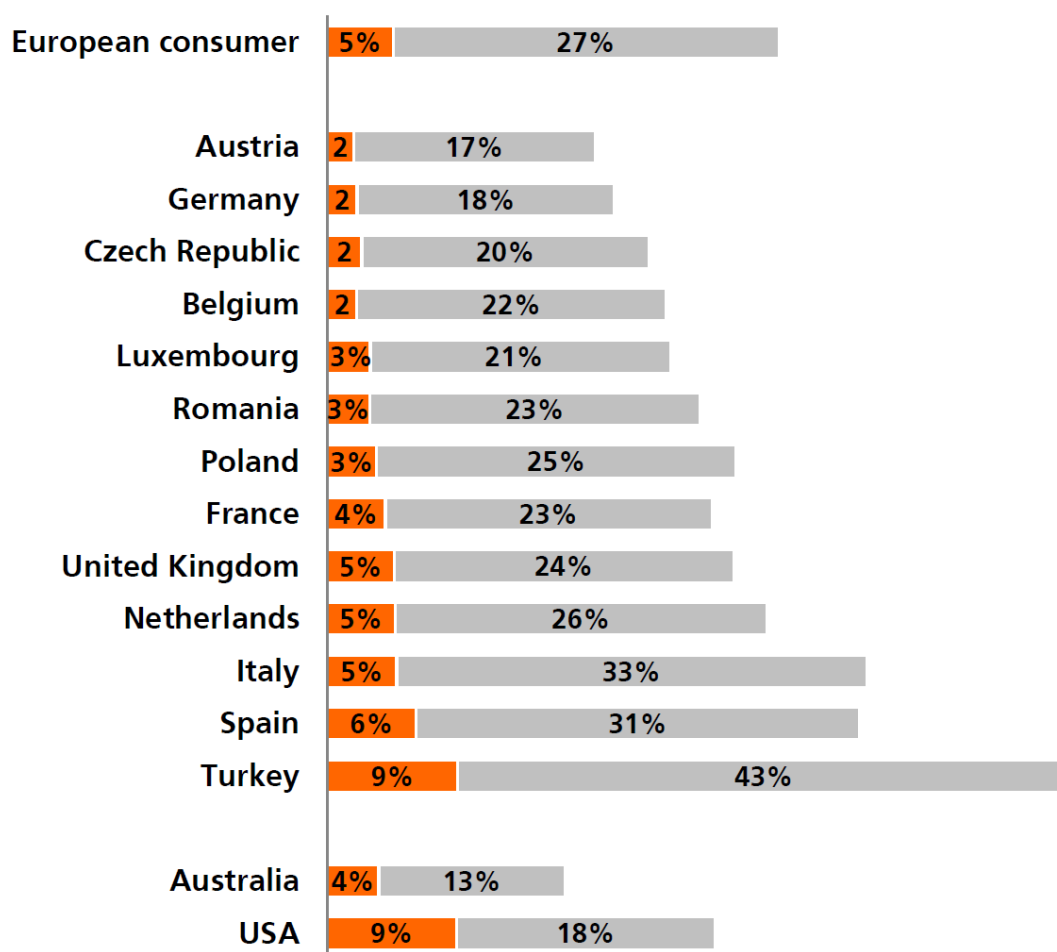


Figure 1. Knowledge on sharing economy [1]

When we compare US usage average, it can be seen that it is higher than EU average. Also, MED region countries, that are above EU average, are still behind US and the encouragement of wider use should be an obvious strategic priority.

A more recent study [3] on sharing economy shows slightly different results than in previously described poll that are interesting to compare.

In Figure 2 [3] we see results of a poll where people were asked on their experience regarding collaborative economy *platforms*.

It is important to compare this poll to previous one since, on average, 52% of people in EU know something about those platforms, unlike only 27% that answered that they know something on sharing economy.

The comparison of those results we can arrive at the conclusion that *SE platforms* are better understood and recognized by average person than the pure SE definition or business model.

When we think about it, it is a logical result. People are more aware of various ICT applications that are used among them or by some of their colleagues/relatives. Those ICT services for SE activities that are used on computers and mobile devices actually create awareness on new ways of doing business.

Thus, we can conclude that any public awareness activity promoting SE should avoid the error of speaking in expert SE terms and should rather give existing examples of SE platforms to describe principles of SE and advantages of its use.

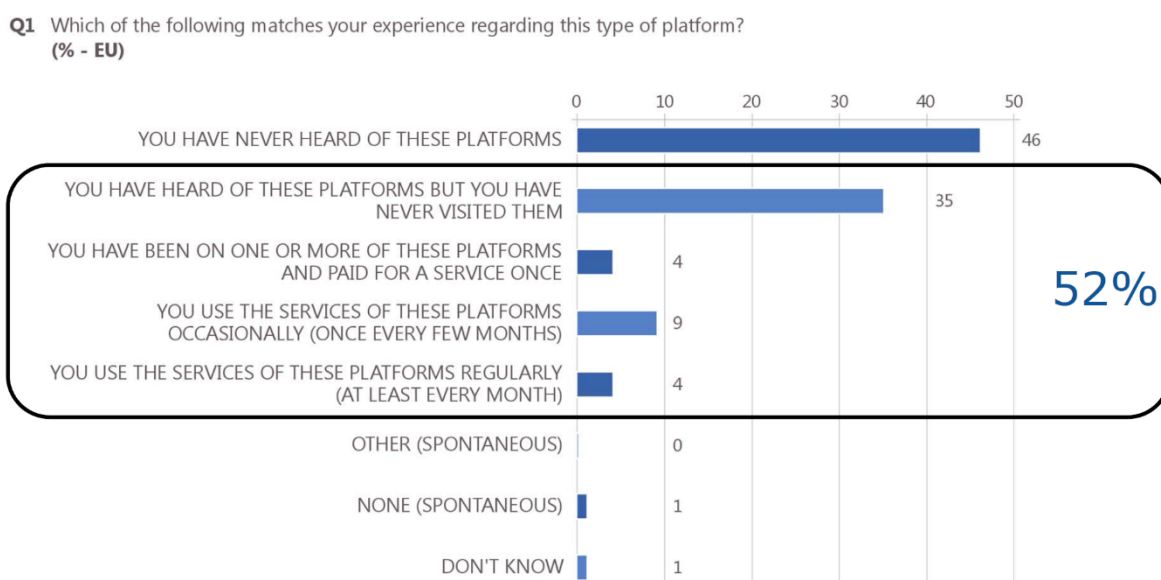


Figure 2. Knowledge about SE platforms [3]

More detailed overview of the actual experience regarding SE platforms on a country by country basis is given in Figure 3 [3].

Q1 Which of the following matches your experience regarding this type of platform?
(%)

		You have never heard of these platforms	You have heard of these platforms but you have never visited them	You have been on one or more of these platforms and paid for a service once	You use the services of these platforms occasionally (once every few months)	You use the services of these platforms regularly (at least every month)	Other (SPONTANEOUS)	None (SPONTANEOUS)	Don't know
EU28		46	35	4	9	4	0	1	1
BE		61	30	2	4	2	1	0	0
BG		48	34	3	9	5	0	0	1
CZ		46	47	3	3	1	0	0	0
DK		42	44	7	5	2	0	0	0
DE		40	38	4	10	6	0	1	1
EE		32	46	6	10	4	0	2	0
IE		34	31	6	17	12	0	0	0
EL		64	25	3	5	1	0	0	2
ES		42	38	4	10	5	1	0	0
FR		14	47	9	20	7	1	2	0
HR		28	48	7	13	4	0	0	0
IT		52	31	3	9	5	0	0	0
CY		87	11	0	1	1	0	0	0
LV		50	25	7	8	9	0	0	1
LT		61	29	3	4	3	0	0	0
LU		48	38	4	6	3	0	1	0
HU		36	47	6	7	3	1	0	0
MT		83	13	1	2	1	0	0	0
NL		44	44	3	6	3	0	0	0
AT		38	47	6	5	4	0	0	0
PL		51	33	4	7	4	0	0	1
PT		58	34	3	3	2	0	0	0
RO		52	26	4	12	4	1	0	1
SI		68	19	1	8	1	2	1	0
SK		59	22	1	7	6	0	3	2
FI		60	30	1	5	2	1	0	1
SE		49	35	3	7	5	1	0	0
UK		70	21	1	5	2	0	1	0
Highest percentage per country		Lowest percentage per country							
		Highest percentage per item				Lowest percentage per item			

Figure 3. Comparison of knowledge about SE platforms in member states [3]

By analyzing results from individual member states, we can see that awareness of SE platforms is again, as in the previous study, present in MED member states.

Expectations of future participation in SE is also an interesting fact to analyze and it is given in Figure 4 [1]. Figure clearly shows that majority of people in EU think that their participation in SE will increase in the next period.

MED countries results show again good forecasts that could lead to narrowing the gap compared to US and possibly also becoming global leading SE countries. Turkey again leads the poll with almost 50% of the people expecting SE participation to grow, which is an impressive result. Italy, Spain and France are also highly positive on SE growth.

THE QUESTION

Do you think your participation in the sharing economy in the next 12 months will ...

Percent who gave the below answers

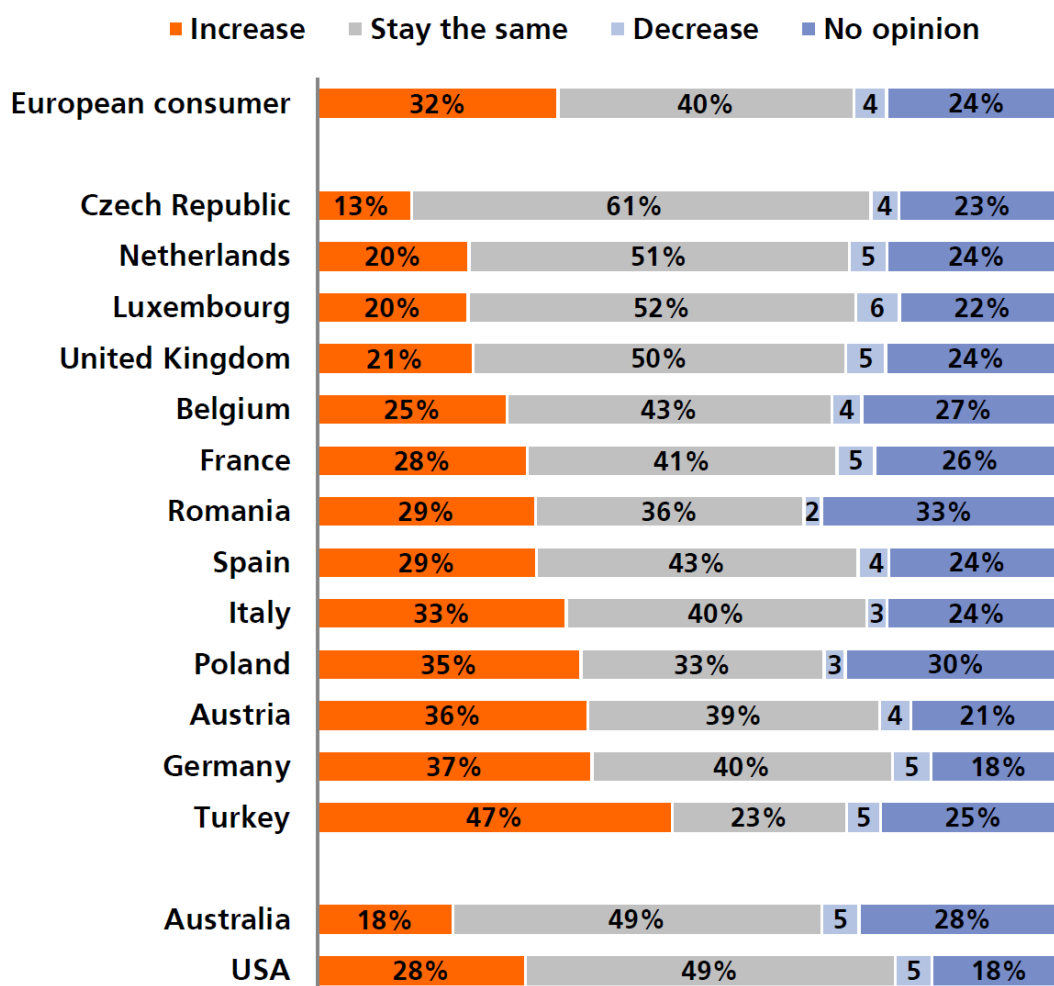
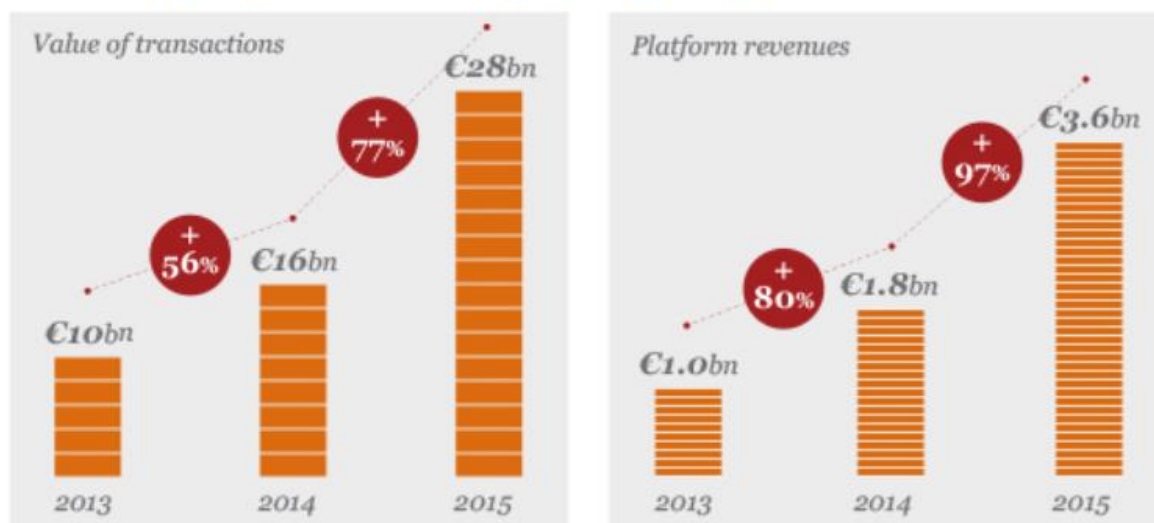


Figure 4. Expectations of future participation in SE [1]

The SE in Europe is growing rapidly. Gross revenue in the EU from SE platforms was estimated to be €28 billion in 2015, the amount that almost doubled from the year before that can be seen in Figure 5 [5].

This information can be an attractive motivational factor when presenting SE to potential future SE service providers.

Revenues and total transaction value facilitated by sharing economy platforms in Europe, 2013-2015



Source: 2016 PwC analysis

Figure 5. SE in Europe is growing [5]

When we analyze the future motivation of the use of SE by age, shown in Figure 6 [1], we can see important socioeconomic aspects of SE. Younger population is more likely to embrace SE which points to important strategic goal that is the importance of education for economic growth.

This result is also important in our proposed setup of new SE Network where education on SE and knowledge sharing will play significant role.

It is also expected that everyday exposure of young people to internet based technologies make them more acceptive to novel way of doing business through mobile applications and thus SE.

We also analyze this when we address SE technology prerequisites such as internet access later in this analysis.

THE QUESTION

Do you think your participation in the sharing economy in the next 12 months will ...

Percent of European consumers who gave the below answers

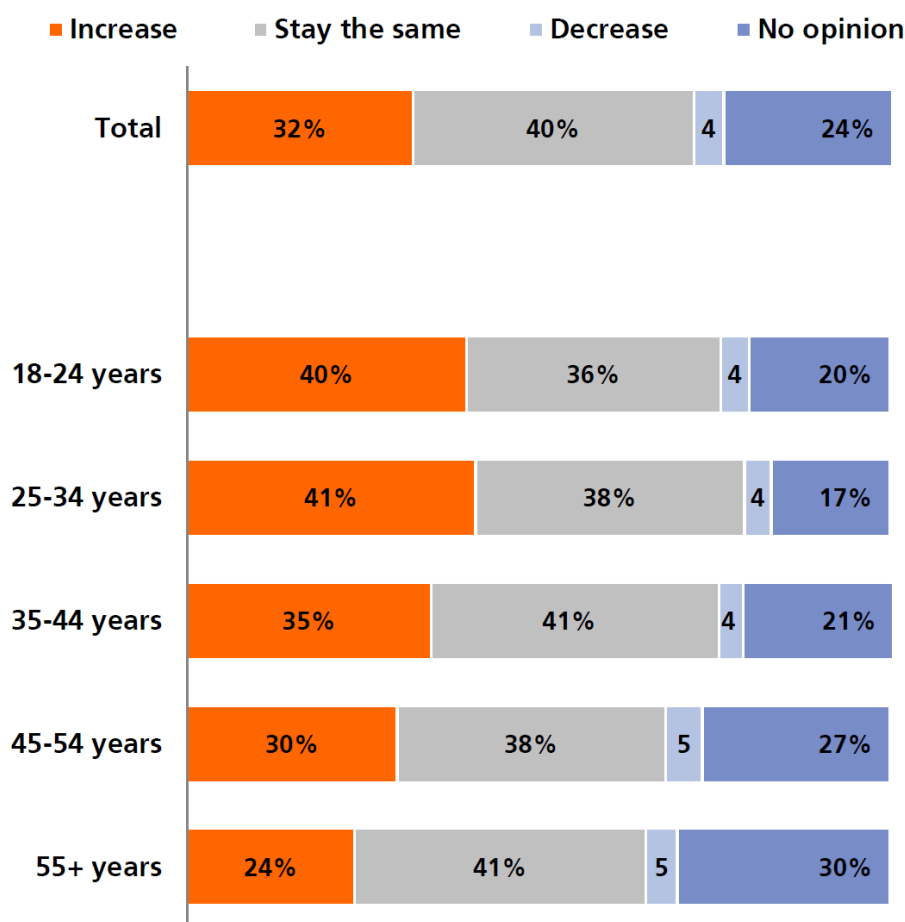


Figure 6. Use of SE by age [1]

An important analysis of SE for MED regions is target use of this novel business model and the technology to achieve it.

Same analysis shows that use of SE in transportation is currently most widely used application domain, with accommodation being closely second [5].

Again, there are some differences when, in another poll, the question was asked in a different way. In Figure 7 [1] we see that holiday accommodation is on the top of the list of items people were paid to share. Cars are here in 2nd position together with some other items like sports equipment and children's items.

When looking at future, results do change. People generally see many unused items they own, that they would be interested to share. Holiday accommodation is still at the top of preferences, but it can be seen that number of new items are becoming attractive to share.

This is a great example how existing technology and business models create ideas to expand beyond what is currently existing on the market. This is a natural educational cycle and demonstrates how investments into underlying technologies and education can truly bring benefits to larger society.

THE QUESTION

Of the following items, please indicate if you own them? If so, your attitude to sharing them?

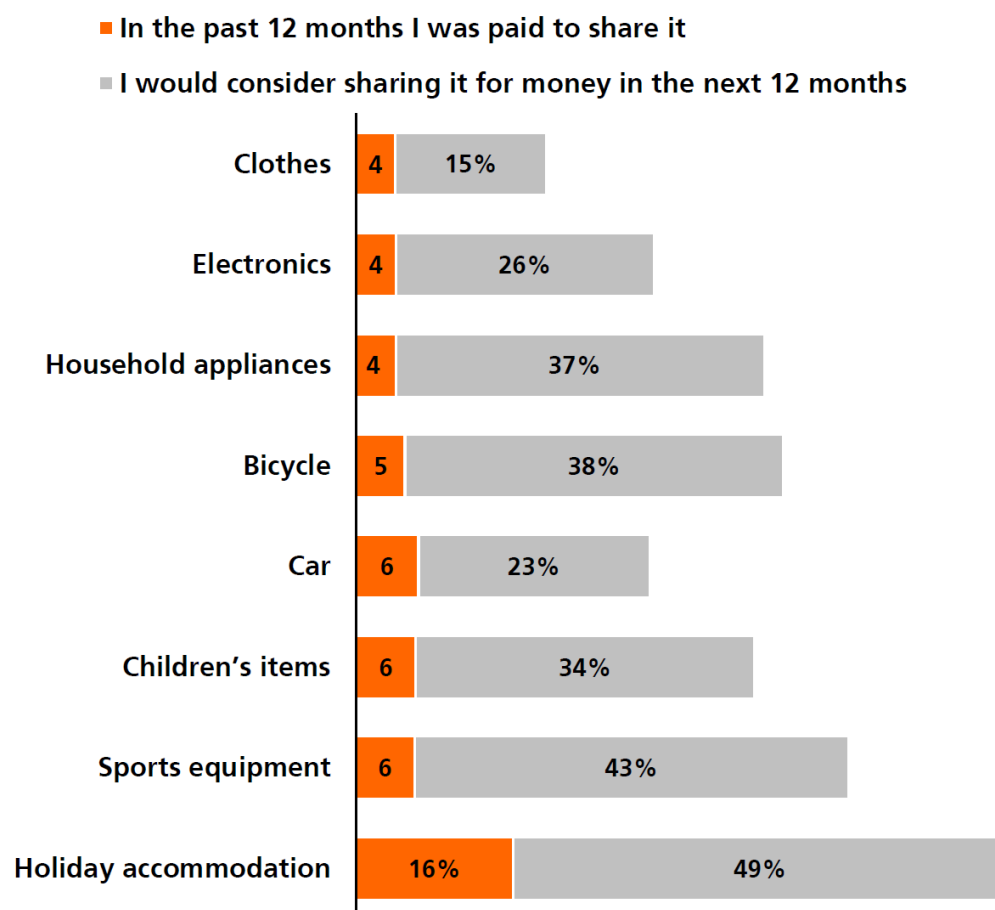


Figure 7. Shared item groups now and in the future [1]

Similar analysis can be done related to most attractive items to borrow (Figure 8 [1]). Cars were top on the list but the interest to use new technologies and new business models for holiday accommodation is by far the most attractive future use.

This, again, well coincides with M&ED region tourist activities and knowledge on various SE platforms that exist for such activities.

THE QUESTION

Of the following items, what is your attitude to borrowing them?

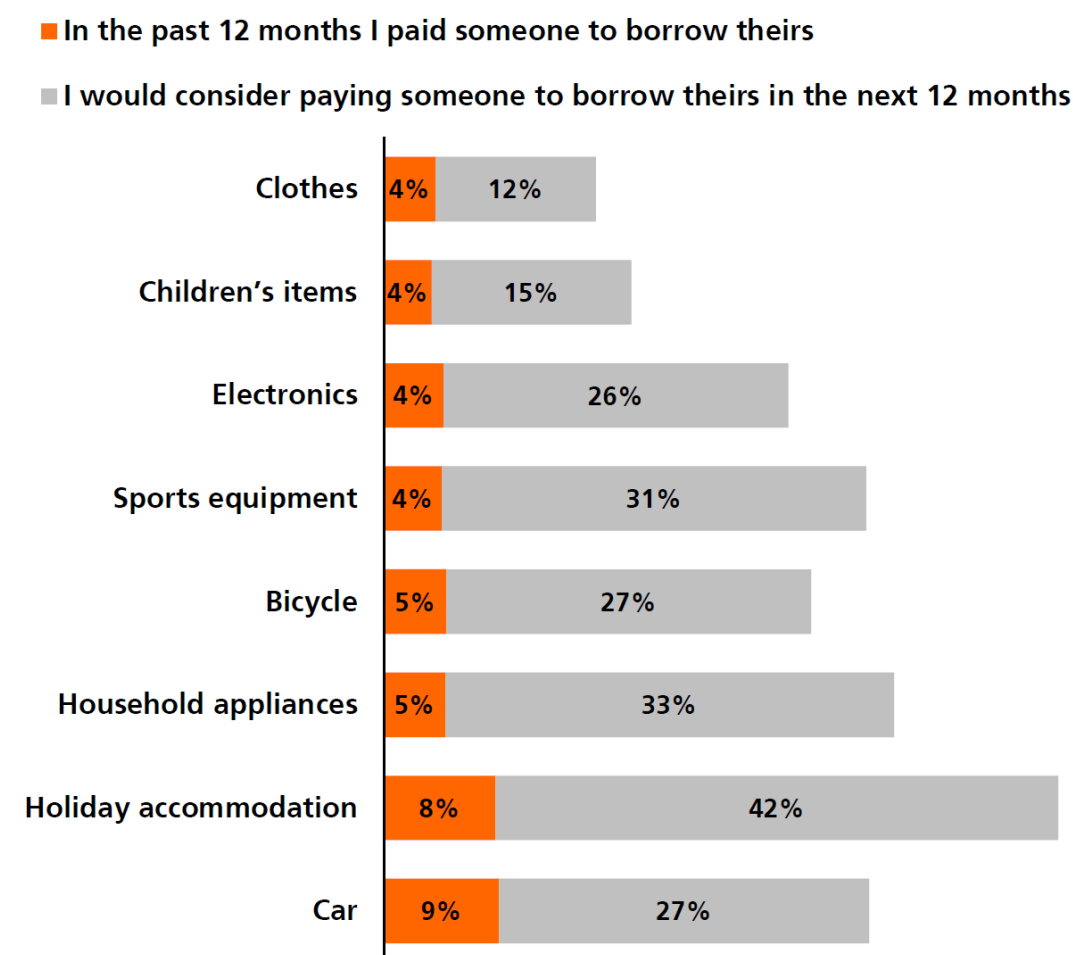


Figure 8. Borrowed item groups now and in the future [1]

When we compare the earnings from SE activities it can be seen that there are two basic entrepreneur groups. The comparison is given in Figure 9 [1]. In the first one, that covers majority of participants, earnings are very small and we can see that SE can still not be considered as stable income source. There is still a need for wider expansion of services offered and, naturally, more users of those services.

The other majority group, represents users that have based more weight on their SE business and their yearly income generates respectable earnings.

THE QUESTION

How much money have you earned in the past 12 months through sharing something you own?

Number of people who gave an answer between €1 and €50,000, grouped into the below euro bands

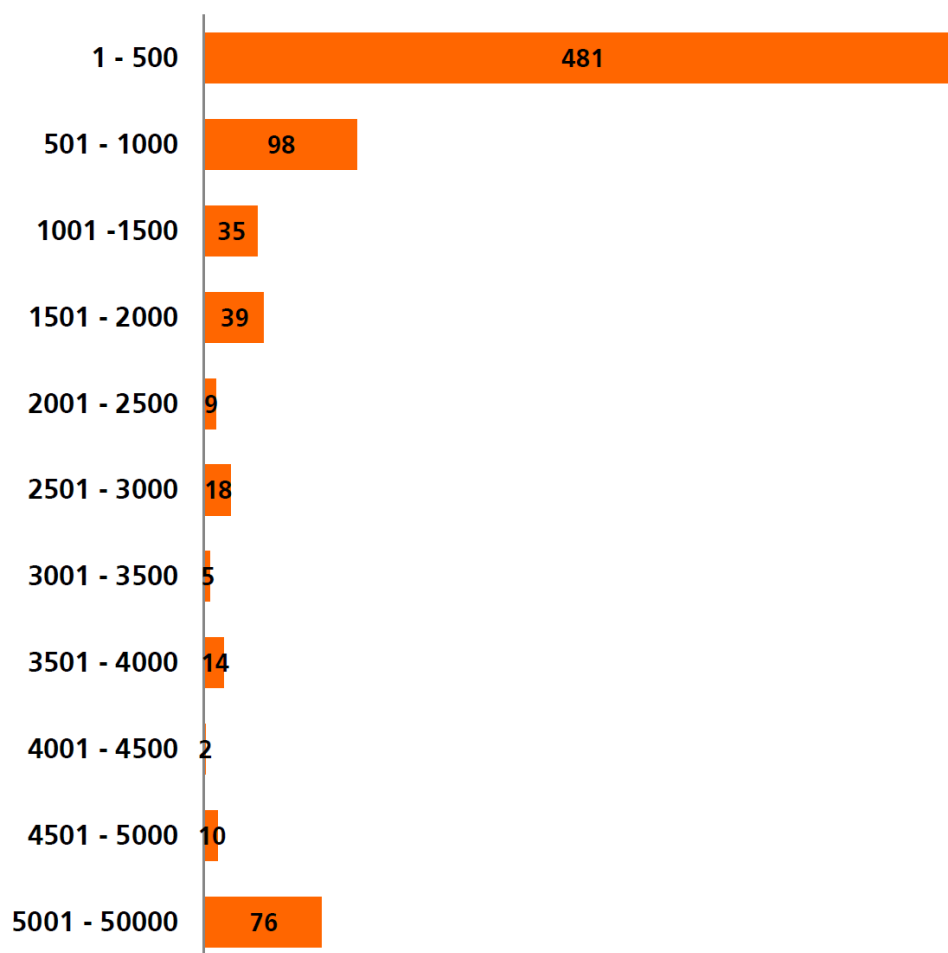


Figure 9. Averaged earnings [1]

The main drivers for the use of sharing economy are few, but saving money is considered by most as primary driver. This is presented in Figure 10 [1]. MED countries also show very high recognition of impact on environment that is slightly less present in some other non-MED countries. It is important to recognize that “saving money” is recognized as more important than “earning money” that puts SE exactly in correct perspective of sharing items that have recognizable costs associated with the ownership.

THE QUESTION

To which degree do these factors influence your participation in the sharing economy?

Percent who answered “very influential” or “influential”

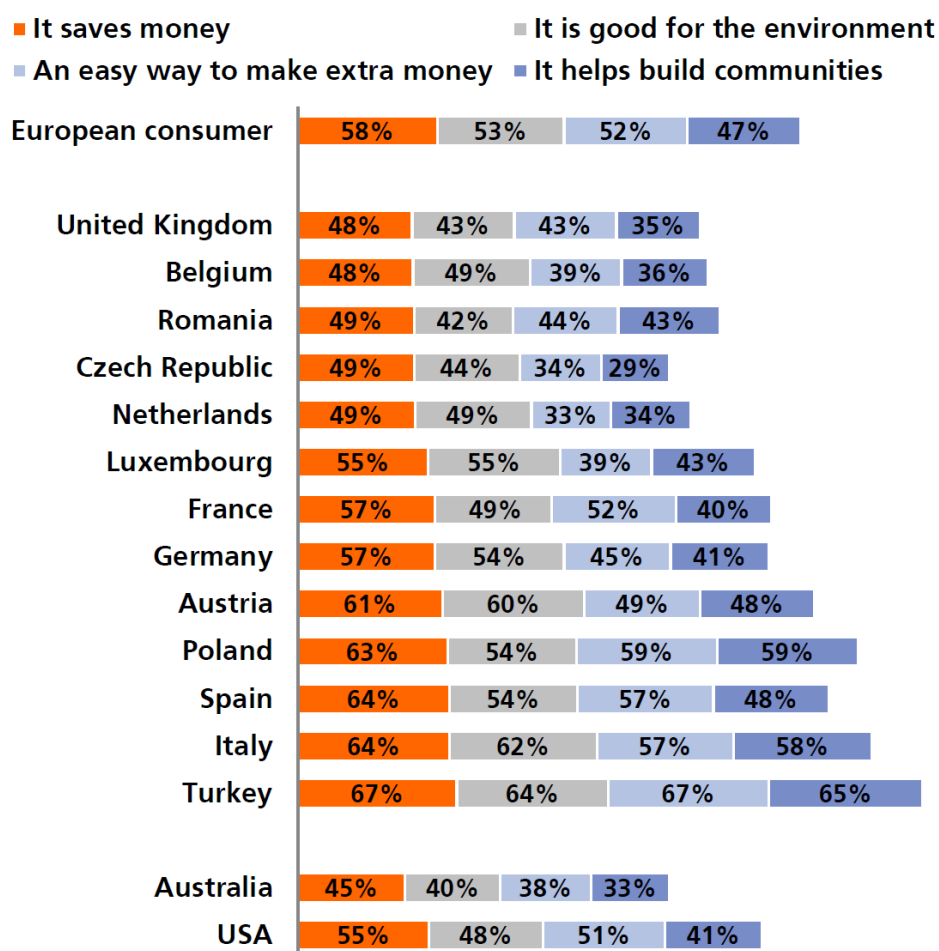


Figure 10. Positive factors influencing participation in SE [1]

The poll about negative context of SE has also some interesting results that can be used to compare MED and non-MED regions. The reluctance to share property they own is, on average, less present in MED region countries.

On average, all countries share two major concerns related to insurance of property and quality of shared items, where actual results vary from country to country.

THE QUESTION

To which degree do these factors influence your participation in the sharing economy?

Percent who answered "very influential" or "influential"

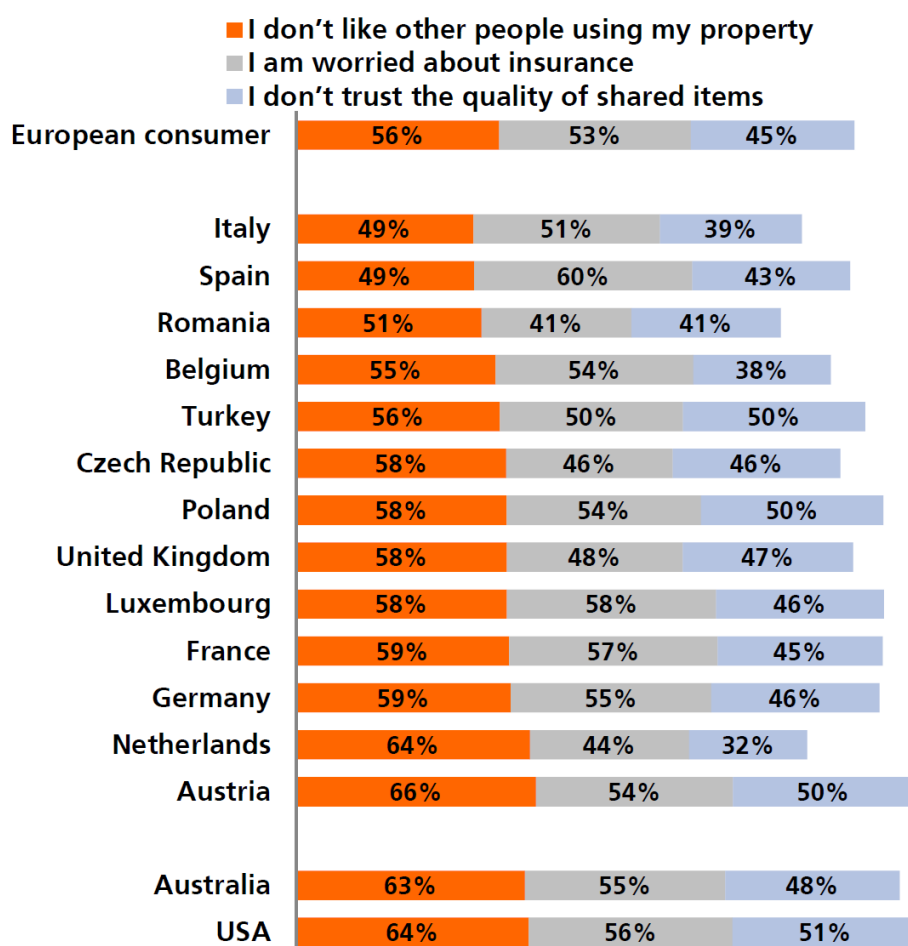


Figure 11. Negative factors influencing participation in SE [1]

Australia and USA show that reluctance to share own property is still, on average, a major concern.

2. Comparison of sharing economy services and platforms adoption

As we analyzed and have demonstrated in previous chapter, the distinction between general sharing economy model and recognizable SE services and their respective IC platforms goes very much in favor of the latter one.

People are more aware of popular SE services that exist in particular member state or region then in general SE definition. In this chapter, we present more detailed analysis on characteristics of SE platforms and we introduce analysis on some SE services that are successfully in operation on those platforms.

From the poll results, shown in Figure 12 [3], we can see that there is still large number of people that have never provided any SE service over some of the existing platforms. The number of people regularly offering services over SE platforms is still small (5%).

Q2 Have you ever provided services on these platforms?
 (% - EU)

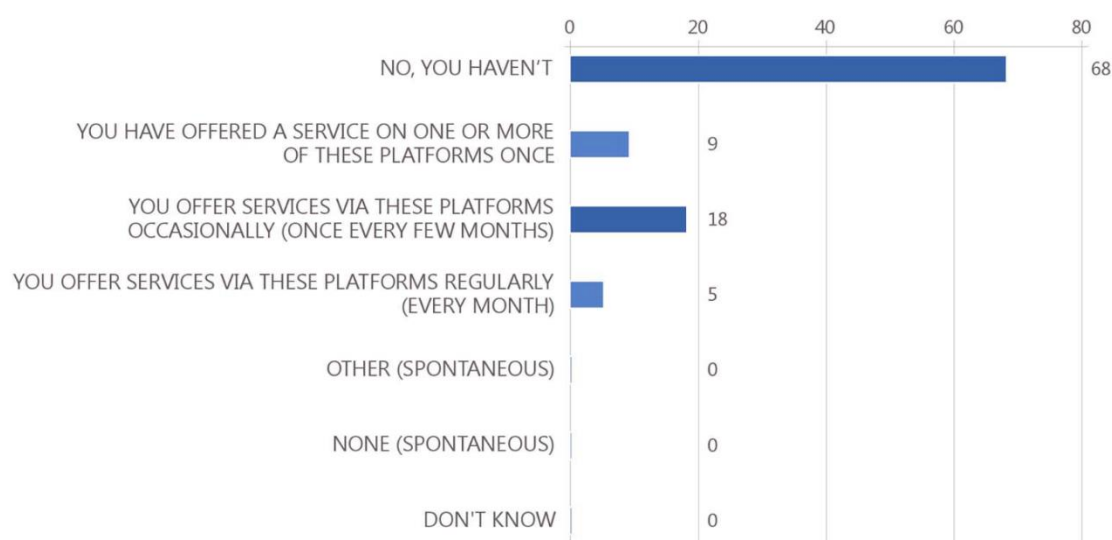


Figure 12. Providing services on SE platforms [3]

When we look at what people, who know about SE platforms, think are main benefits of SE platforms in comparison to traditional approach (Figure 13 [3]) we can conclude few things:

- The organization of services and convenience of using it is the primary factor
- Lower costs associated with running service is also very important feature
- Possibility to have new type of services is also quite interesting feature for all involved

Q3 Compared to the traditional commerce of goods and services, what do you think are the main benefits of this type of platform for its users? (MAX. 2 ANSWERS)
(% - EU)

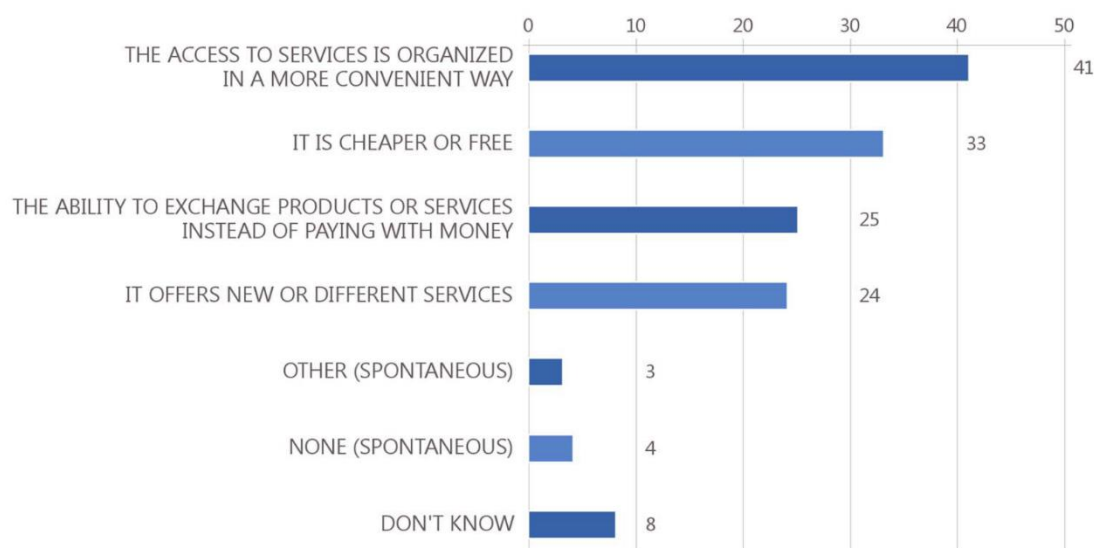


Figure 13. Main benefits SE platforms [3]

In the Figure 14 [3] responses from each individual member state are presented. In this comparison, we can see that convenient access to services are major advantage recognized in most countries. MED countries do have a slightly different distribution. E.g. poll participants Spain recognized importance of novel services while e.g. France and Croatia put most value on the low cost of SE platforms.

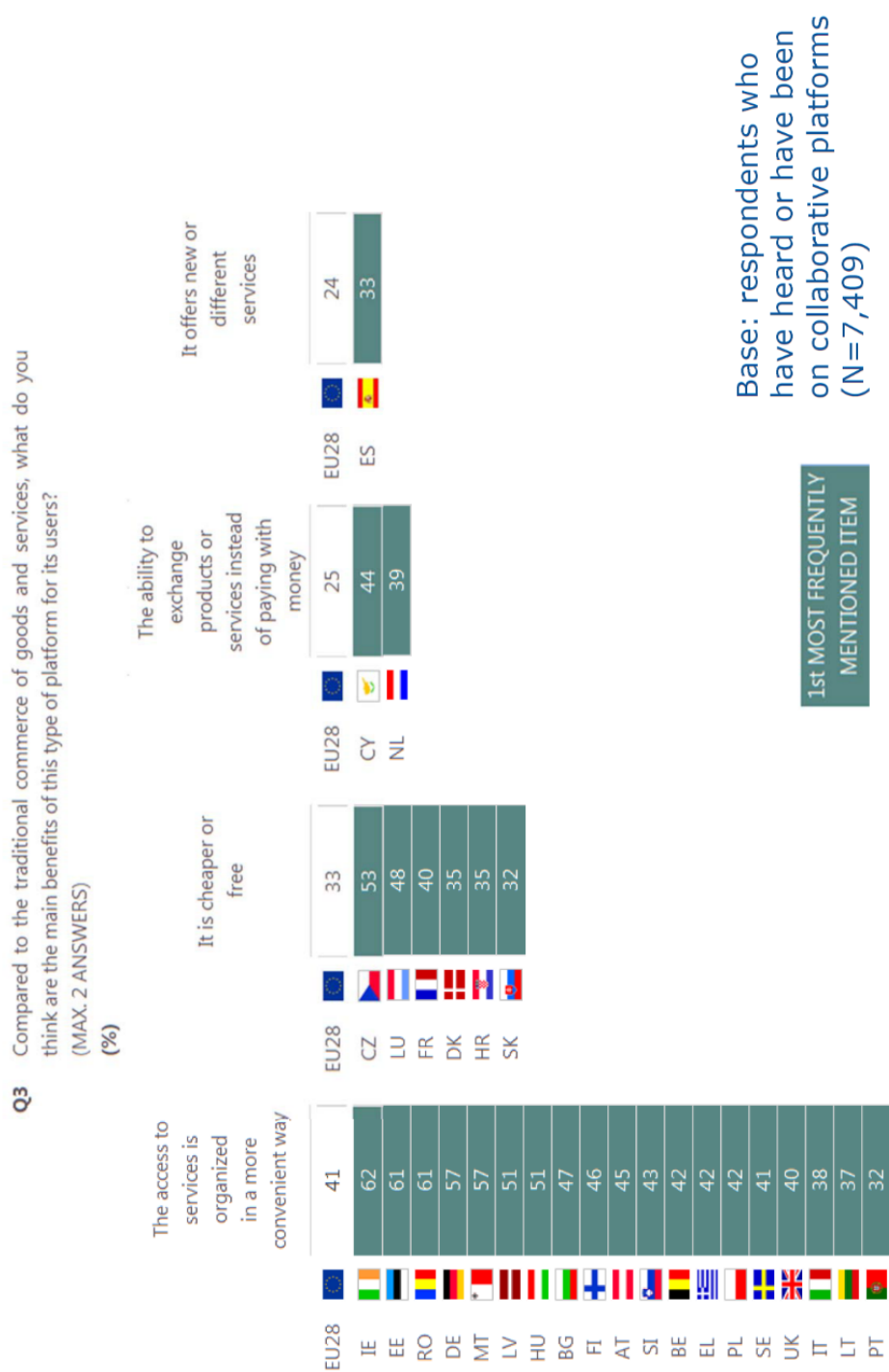


Figure 14. Comparison of SE platforms benefits per member state [3]

There are obvious and known disadvantages of SE platforms seen by poll participants. From Figure 15 [3] it can be seen that not knowing who is the “owner” of service poses a problem. Quality of service and responsibility are usually closely coupled to some person we can talk to in case of problems, which is missing in many SE services.

Mistrust of Internet as such, or the service provider, or disappointment in provided services are other main reasons for negative comments.

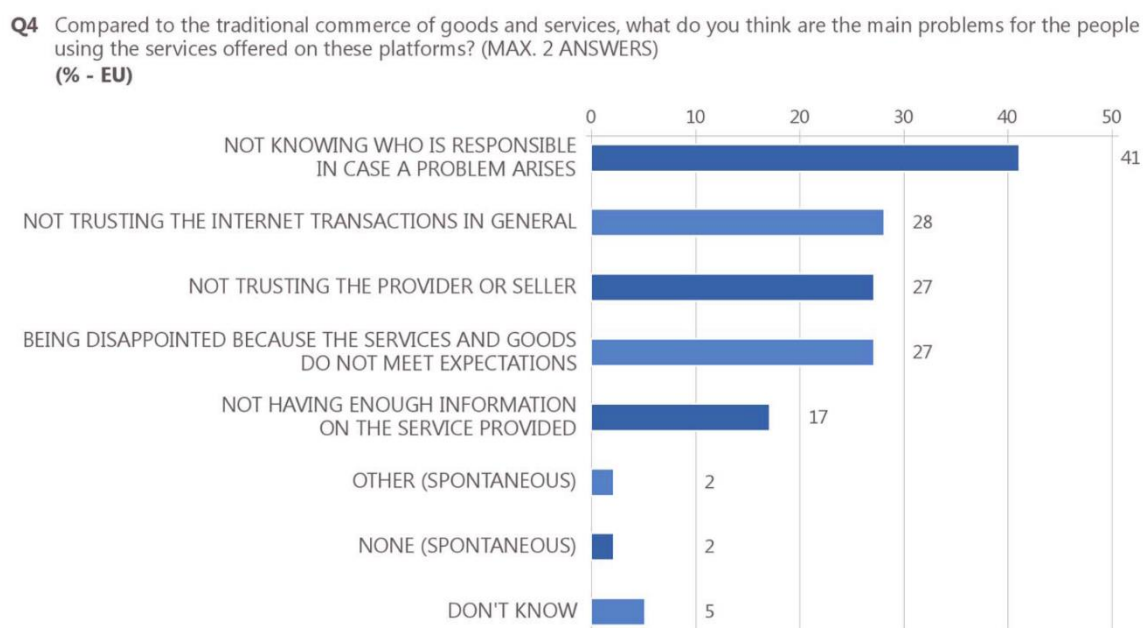


Figure 15. Opinions on main SE platform problems [3]

Here, as well, we can compare answers based on the countries (Figure 16 [3]). Spain and France users see anonymity of service owner as biggest problem. Portugal, Cyprus and Croatia users are reluctant to Internet transactions. Slovenia and Malta users do not trust service providers.

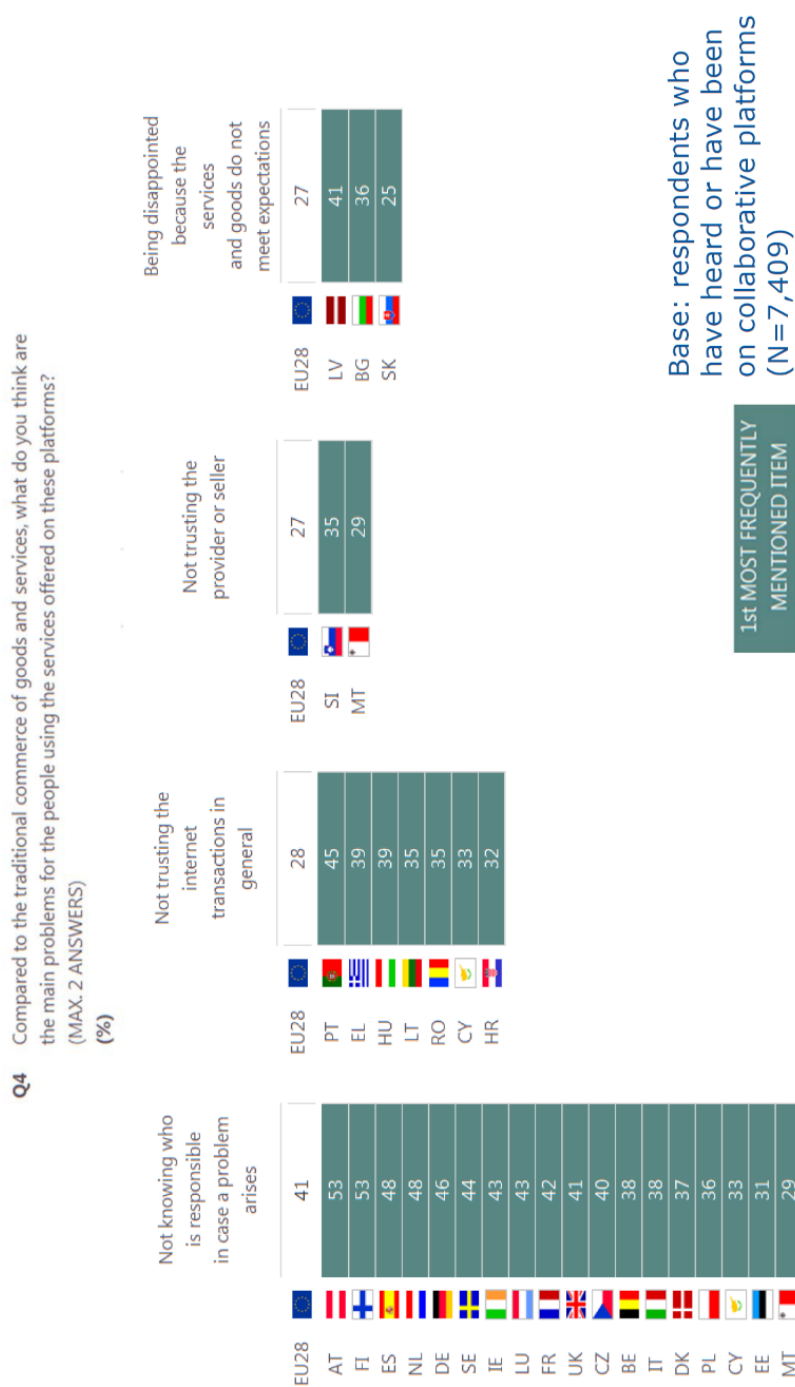


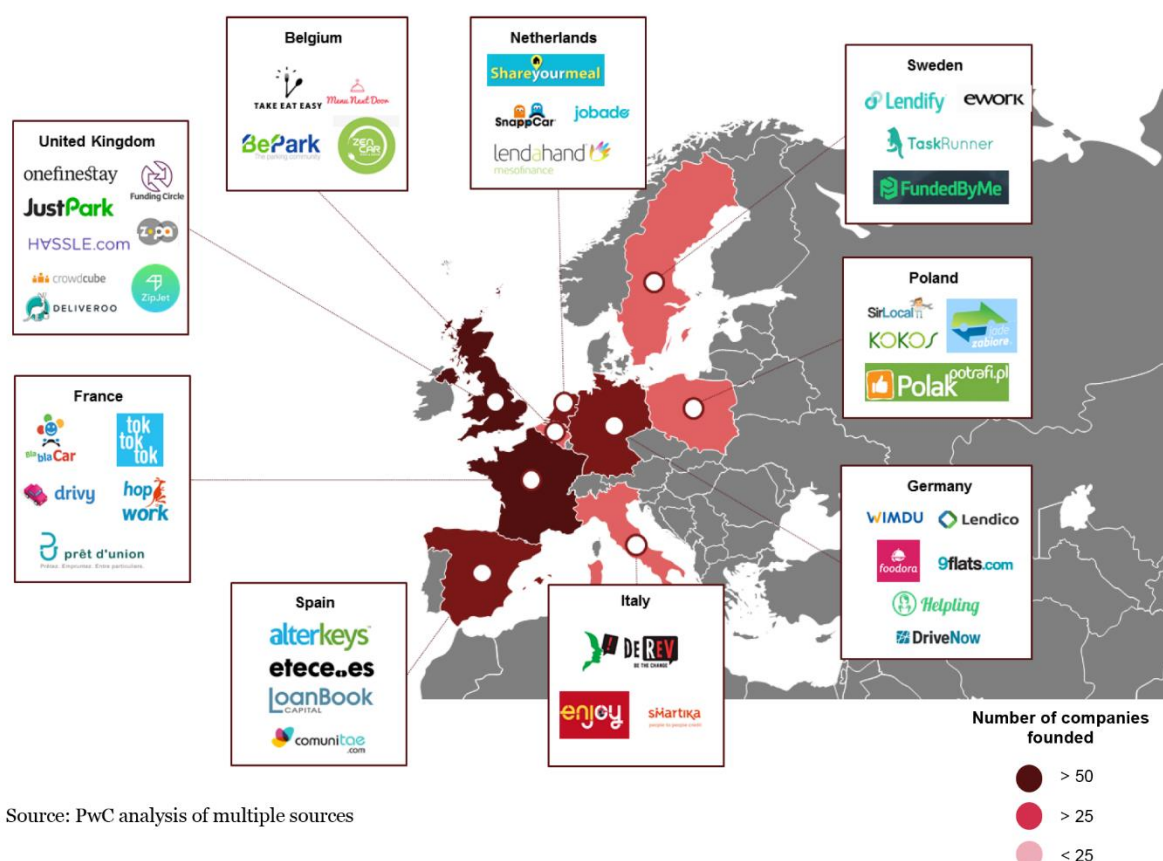
Figure 16. Comparison of opinions about SE platforms problems in member states [3]

3. Comparison of implemented sharing economy platforms and services

Europe differs in adoption of sharing economy. Number of services implemented in different countries and regions differs significantly. The same is true with number of companies offering SE platforms.

From Figure 17 [4] we can see that France leads in number of SE companies in M&E countries. Spain also has good number of such companies, and Italy can be considered slightly less active.

When we compare M&E countries with other EU countries we see that France is indeed on the forefront with UK in number of SE companies. With Spain and Italy being also active we can confirm earlier conclusions that tourist activities have made SE platforms attractive in M&E regions and as a result number of SE companies are present in those regions.



Source: PwC analysis of multiple sources

Figure 17. Number of collaborative economy companies by country of origin [4]

In the following two Figures, we can see comparison of most widely used SE services implemented in M&ED region countries compared to services in other non-M&ED countries.

Belgium 	<ul style="list-style-type: none"> Overall, in 2015, 8.5% of Belgians declared having exchanged or shared a service or an asset in exchange for money. The level of participation in the collaborative economy rises to as high as 16% in Brussels.²³ ING estimated that the most popular sector is the peer-to-peer accommodation sector, with over 4,900 listings in Brussels alone. Alternative finance is still underdeveloped compared to other member states: Belgium ranked 13th out of 16 in alternative finance volume per capita in 2014, roughly the same adoption as the Czech Republic and Slovakia.
France 	<ul style="list-style-type: none"> OpinionWay & Axis Consultants estimated that 22% of French people reported participating in the collaborative economy²³. Paris is Airbnb's top city by revenue despite the platform only entering the city in 2012. Globally, France is Airbnb's second biggest market²³. Paris is Uber's second city by revenue in Europe. France is the European leader in peer-to-peer carsharing, with an estimated 800,000 members²⁴. Car schemes such as Autolib are world-leading examples of the B2C model and P2P platforms such as Drivy claim 500,000 users in France alone²⁵. French consumers report high awareness of collaborative economy businesses: 41% of them report knowing Blablacar and 20% report knowing Airbnb²⁶. The volume of collaborative finance transactions is growing at an average growth rate of 167% and reached €154m in 2014, ranking France as second place in Europe in 2014²⁶.
Germany 	<ul style="list-style-type: none"> The strongest motivations for Germans participating in the collaborative economy are savings, convenience as well as enjoyment and environmental consciousness²⁷. Germany is the #2 European country for peer-to-peer carsharing, with an estimated 140,000+ members²⁴. Participation in alternative finance has grown by 113% in 2014 to reach €140m (in terms of volume of transactions), ranking Germany as the third highest European country in 2014²⁸.
Italy 	<ul style="list-style-type: none"> Carsharing schemes are popular in Italy: networks such as car2go (Rome), Enjoy (Milan, Turin, Rome, Florence) accounted for an estimated 130,000 members in 2013²⁹. IPSE estimated that the number of 'iPros' (freelancers only active online) only increased by 12% between 2004 and 2013 –less than for the European average of 45% and significantly less than the Netherlands' 93% increase²⁰. Alternative finance is not very widespread in Italy, with a total volume of 8.2m euros in 2014, falling behind other smaller member states such as Estonia and Finland.
Netherlands 	<ul style="list-style-type: none"> Overall, in 2014, ING estimated that 550,000 Dutch households (c.8% of the total) participated in the collaborative economy as either a provider and/or customer. Interestingly, more Dutch households would be ready to participate as providers rather than users (1/3 vs. 1/4). ING findings show that users are generally young, educated and are motivated by financial considerations while service providers have more idealistic, environmental considerations. ING also estimates that home sharing & P2P accommodation rentals account for roughly half of total collaborative economy revenues in the country. Carsharing is a relatively nascent market in the Netherlands, but shows great promise, with around 100,000 members in peer-to-peer carsharing schemes²⁵. Collaborative finance is increasingly popular in the Netherlands. It is the fourth largest European market in terms of alternative finance transaction volumes per capita. In 2014, transactions grew by 59% to 78m euros².

Figure 18.1 Comparison of sharing economy adoption in M&ED and non-M&ED member states [4]

Poland



- Overall, a survey by PwC Poland showed that 40% of the population have heard about the collaborative economy, while 26% have used collaborative economy services.
- 54% of sharing economy service users in Poland claim that the main advantage of using collaborative economy services is price considerations.
- PwC Poland estimates that the total supply of peer-to-peer accommodation accounted for around 10% of the total accommodation capacity in Poland.

Spain



- P2P accommodation rentals are extremely popular and make up an estimated 25% of the total supply of rooms in Spain, and almost 50% of the capacity in urban tourist centres. In four major cities, P2P rental platforms offer greater capacity than 'traditional' accommodation providers²¹.
- The top 3 peer-to-peer accommodation market players account for 65% of the market: Airbnb with 27%, followed by HomeAway with 24% and Niumba with 14%⁹.
- Alternative finance platforms are increasingly perceived as an alternative to banks. This has driven growth in transaction volumes on these platforms (+152% in 2014 to €62m). This makes Spain the 6th largest alternative finance market in Europe.⁸

Sweden



- Swedish research revealed that 12% of the working-age population (around 737,000 people) were already working in the "gig" economy and 24% were trying to find work this way. The largest online-only freelance platform, eWork, claims over 5,000 freelancers.
- Joseph Michael, Business Development Manager for the Stockholm Region, says that the main drivers of the collaborative economy in Sweden are its world-leading broadband infrastructure which has led to widespread tech and mobile adoption, as well as the environmental consciousness of Swedes.
- While all major international players have not expanded to Sweden yet, many players have grown locally. For instance, ridesharing companies have been developing since 2007, when Bilplats.se and Skjutsgruppen.nu launched²².
- Furthermore, there are several examples of very successful non-profit collaborative economy initiatives in Sweden. For instance the non-profit ridesharing website Skjutsgruppen.nu used crowdfunding to grow to over 40,000 users.
- Collaborative finance is very popular in Sweden: it is the third largest European market in terms of volume of transactions per capita.

UK



- Elance (now UpWork) found that freelancing or gigging is now seen as a highly attractive and lucrative career option by 87% of students with first or second class degrees. This compares to 77% of those with lower class degrees²³.
- The UK is the uncontested European leader in alternative finance. It makes up approximately 75% of the European alternative finance market, with over £3.3bn transaction volume in 2015²⁴.
- PwC's analysis of the London hospitality market shows that there were 31,000 listings in the city in July 2015, with the platform expanding room supply by several multiples in non-central boroughs. Overall in the UK, our research shows that one in ten hoteliers have reported experiencing negative demand as a result of the platform's rise.²⁵
- London is now Taskrabbit's 3rd market in the world and its fastest growing city

Figure 18.2 Comparison of sharing economy adoption in MED and non-MED member states [4]

At the end of this document we provide list of SW companies from some of those countries to give reader a better overview on implemented SE platforms.

4. Comparison of legal aspects of SE in various countries

The overall, unsupported, opinion that digital economy will hurt regular economy and affect existing workforce has led to confrontation regarding the use of SE in many countries.

In general, there is unanimous support to sharing economy, yet administrative and legal barriers start appearing in many countries/regions/towns.

A most widely cross-boundary example of this is opposition to Uber service in many countries. Uber service obviously disrupts the existing taxi markets but there are positive and negative aspects of this service as recognized by many. Positive effects are in the domain of novel SE service that allows numerous citizens to be involved as service providers at any given time and as long as they want. This micro effect of individual drivers offering their services using common IT platform accounts for significant cumulative number of car rides. The downside of the service is that, through various legal tweaks, many platforms serve as a vehicle to avoid standard regulative procedures other taxi providers must follow and therefore represents unfair market competition.

It has been reported that Uber service has been revoked legal right to do business in several countries/regions/towns.

For example, Uber tried to define its business in Croatia as p2p service defined as short term car sharing. By doing so it tried to avoid Croatian legal framework for taxi operation. This brought to several protests by taxi drivers that finally led to partial stop through the means of fining of drivers by the police, takeover of vehicles and motion for redefinition of legal framework for such services.

EU made several analytical reviews related to comparison of sharing economy services in several EU cities. For this Opendoors project few results are of great interest so we will present them in executive short form here (reader is encouraged to read full report details provided in references).

First we provide some results on business authorization imposed on peer providers and platforms for Barcelona, Berlin and Amsterdam [7].

The document assesses the regulatory framework for the collaborative economy in the accommodation/tourism sector (i.e. short-term rental of rooms or apartments for touristic use offered through online platforms, and home swapping activities) in Barcelona, Berlin and Amsterdam, respectively, and concludes:

“Home swapping activities attract no interest from regulators in either city. Therefore, none has specific rules for home swapping. This seems to be in line with the Services Directive and ECJ case law on the freedom to provide services stating that ‘services’ are normally provided against remuneration.

In all three cities, the touristic rental of private dwellings and/or private rooms has been regulated both by local zoning authorities and by tourism regulators. These regulations include several measures which may qualify as restrictions to the freedom to provide services within the internal market. Therefore, each such measure may need to be assessed under the necessity and proportionality tests established in the applicable EU case-law.

The following justifications for regulating seem to be at the core of all three systems:

- to address the scarcity of affordable housing for citizens;
- to address the unrest generated by the coexistence of tourists and citizens;
- to address tax fraud and tax evasion;
- to distinguish the activity from traditional accommodation activities, specifically addressing the interaction of intermediate on-line platforms in the new sharing economy business models; and
- to ensure touristic services of a certain quality, thereby protecting the user of those services as a consumer.

From a suitability perspective, some justifications seem more solid than others and more likely to be considered necessary to protect a legitimate State interest according to EU case-law on the internal market. For example, guaranteeing food security and/or safety in touristic dwellings (e.g. fire prevention) could justify several restrictions. Conversely, to prevent intrusiveness is not a legitimate end. In any event, stakeholders argue that a different regulatory approach to these new business models is needed.

A proportionality assessment requires a more nuanced approach to each restriction. The test is whether any less restrictive means would serve the same purpose, and in

the light of this test some measures do seem disproportionate. For example, a complete ban on new market entry hardly squares with EU internal market rules and case-law. Also, certain requirements imposed on on-line platforms seem at odds with the E-commerce Directive and related ECJ case-law. One way to sort the wheat from the chaff might be to distinguish a platform's role as a pure marketplace from its role as a service provider.

While the above considerations are relevant to all three cities reviewed, the extent to which each of them addresses such considerations differs greatly. Nevertheless, their rules are the result of policy choices usually based on ample social consensus.

Neither the German NCA (Bundeskartellamt) nor the Dutch NCA (Autoriteit Consument & Markt) have even considered intervening in the market for touristic rentals. Conversely, the Spanish NCA (Comisión Nacional de los Mercados y la Competencia) and the Catalan regional authority (Autoritat Catalana de la Competència) have both rather strongly opposed attempts to restrict the offer of tourist dwellings in several Spanish regions and cities, including Barcelona. Meanwhile, Spanish regional and local authorities are planning swift regulation to protect fundamental social interests.

Whatever the final policy and regulatory choices may be, some existing regulations do seem disproportionate under the EU internal market and competition rules, while some others may be absolutely necessary to address the externalities of the new sharing economy business models."

As a second comparison document we would like to present some results from the study "Analytical paper on market access requirements in the short-term accommodation rental sector in Paris, Rome, Milan and London" [8].

"In this report London is distinguishable from the others for the efforts to put itself at the forefront of the collaborative economy, and to question old barriers that stop people sharing their assets. Accordingly, London changed its rules on collaborative economy in March 2015 with the Deregulation Act 2015. As clearly stated in the accompanying Explanatory Notes to the Act, the reason for this change lies in the development of the internet and in changes in the way that people want to use their home. These changes "have led to calls for the provisions of section 25 to be relaxed so that people in London can let out their property as temporary sleeping accommodation for short periods without obtaining planning permission".

A more conservative approach has been adopted by the other cities studied in this survey. Paris, Rome and Milan all apply the old rules to the new scenario, with no change as a result of the spreading of peer to peer services in the accommodation sector. This is especially significant in the cases of Rome and Milan: despite both cities amended regional rules in tourist accommodation in 2015, they nonetheless did not take up the opportunity to adapt their legislation to new peer to peer schemes.

The most invoked reason to amend old regulation for the collaborative economy is the nonprofessional status of peers operating through platforms. People who provide services or share their goods in the collaborative economy are not full-time, large scale professionals - Airbnb hosts are not hoteliers, Uber drivers are not professional taxi drivers. And since professionals and peers are radically different, extending rules, which were originally conceived for a professional provision of goods and services, to peer-to-peer services would determine a disparate impact at the expense of sharing undertakings and would erect insurmountable barriers to entry in these growing markets (e.g. imposing a duty to comply with hotel regulations for allowing people to occasionally rent a spare guest room).

On the other hand, the emergence of a peer-to-peer economy, where private, nonprofessional individuals provide services to customers, may lead to safety, health, environmental concerns. Beside information asymmetries, another often invoked danger of peer to peer activities is negative externalities (the most obvious example in short term rentals is the occurrence of guest-noise or the rise in the presence of strangers in a building).

In response to these risks and to avoid race-to-the-bottom dangers, safety protocols, background checks and other rules can be conceived with the aim of protecting consumers. Balancing the two somehow conflicting aspect – having rules different than those applicable for professionals and protecting consumers - is one of the most challenging aspect of the collaborative economy.

The other big issue connected with the emergence of collaborative economy is the diffusion of online platforms that offer an infrastructure upon which peers depend on to connect to each other.

These companies often depict themselves as networks or “marketplaces”, not as service providers. On a legal ground, such a description would lead to the conclusion that only peers are subject to legal obligations and directly responsible for ensuring

safe and reliable services, and authorities would be supposed to enforce regulation only against individual customers. While platforms would just be required to do is to inform their customers about duties and liabilities and warn them about responsibilities for not complying with local regulations. In sum, by framing the platforms as “marketplace”, these p2p companies would not to be bound by rules usually applicable to service providers, distancing themselves from potential violations and making enforcement more difficult.

In making a choice on whether these p2p platforms are service providers or not, reference can be made to ECJ decisions on the liability exemption laid down by the e-Commerce Directive. Since this exemption applies on condition that platforms limit themselves to “providing an intermediary service, neutrally, by a merely technical and automatic processing of data”, but not when they play “an active role”, such as providing assistance to its customers. Given that p2p platform usually perform an active role in the intermediation among peers for the provision of goods and services, it is highly likely that the exemption provided by the Directive would not be applicable to platforms operating in the accommodation sector.

The collaborative economy is a powerful tool of economic inclusion and opportunity that may have a profound positive impact on the urban environment. Beside safety, health, environmental concerns, and the peril of negative externalities, the rising short-term rentals may diminish the availability of long term rental houses in the market, especially affordable ones, and zoning laws and building codes are often invoked to limit these activities in order to protect housing affordability.

Both London and Paris expressed their concerns on many of these aspects. In Greater London justifications for restrictions to the possibility to rent out a residential premise in specific areas rely on the concern for issues arising from frequency of tenant turnover, the risk of losing existing family housing from the mainstream market, and loss of amenity; fear of crime, noise and disturbance, fire risk and hygiene.

French regulation imposing the change of use, in order to rent out residential premise on a short term basis, aims at keeping the development of urban environment under control, not to aggravate the shortage of housing and worsen the lack of housing in cities like Paris; and to take into account social diversity objectives and to balance between housing and employment in different neighborhoods of Paris, in

accordance with local housing program and the local development plan in force in Paris.

No similar explanations are available for Rome and Milan, where there is neither new regulation, nor official documents dealing with the problems. Discrimination based on residence is surely in violation of EU law. However, this wide array of competing and sometimes conflicting aspects of these new innovative collaborative practices must be assessed when defining the occurrence of a justified restriction regarding an indistinctly applicable measure.

In Paris the distinctive legal treatment for residents and non-residents creates an obstacle to the free provision of services, capable of hindering the exercise of this freedom and to deter the provision of services by foreigners, on account of its disproportionate costs to which these rules give rise. As a result, residents can rent their home for up to four months, while this opportunity is precluded to non-residents, regardless the length of the rent. In London, in order to pursue a similar outcome, a limitation on the number of days a property can be rented out has been devised (ninety days) equally applicable to all, with no distinction between residents and non-residents, and proportionality is taken into account in both regulation and enforcement. No limitation of this kind exists in Italy.”

Both summaries copied from aforementioned documents and given above give some insights on actual disruption of markets that SE platforms and services bring. This disruption provides some positive effects but there are always some downsides as well. Legal frameworks are, as usual, lagging and introduction of novel SE platforms and services leads to undefined and unregulated business “playfield”.

The wide complexity of legal frameworks required to cover coexistence of “old-fashioned” business models and new SE business models poses significant challenge.

Following figures (19.1 and 19.2 [4]) give a good overview of various ways individual MED and non-MED countries have addressed SE from regulatory perspective.

<p>Belgium</p> 	<ul style="list-style-type: none"> As of January 2016, hosts renting their accommodation on P2P platforms in Brussels have to ask permission from local authorities and co-owners of their building. Some collaborative economy businesses point out that the absence of a 'micro-entrepreneur' status in Belgium would encourage more online freelance platforms to emerge. In the food sharing space, the public sector can have a rigid application of existing regulation. Nicolas Van Rymenant, CEO of MenuNextDoor, stated that current tax regulations are not adapted to the collaborative economy in Belgium. Other services such as ShareYourMeal point out the stringency of the food hygiene standards that have been applied to home cooks. UberPOP has been banned in Brussels. UberX has not been banned but regulations require drivers to be professionally licensed.
<p>France</p> 	<ul style="list-style-type: none"> Public agencies are adopting a proactive regulatory approach to regulate peer-to-peer rental platforms. In October 2015, Airbnb started collecting 'tourist tax'²⁷ of €0.83 per room night. The creation of the 'auto-entrepreneur' status has encouraged freelance work in France. Furthermore, the labour laws currently reviewed by legislative chambers would simplify the process of going from salaried employment to freelance work. Reports have been published suggesting the creation of an automated tax system to calculate required income tax payments over a certain threshold (cf. 'Terrasse' report, Report from Senate Commission) Ride-sharing platforms have been the subject of intense scrutiny from regulators in France. Drivers are now obligated by law to return to their 'garages' after each journey. Consequently, Uber was recently (Jan 2016) ordered to pay a €1.2m fine after a court upheld a complaint that Uber drivers were acting as taxis by waiting for customers in the street. Uber executives were recently arrested over charges of 'illicit activities'. The restaurateur's union in France has urged the government to ban 'meal-sharing' websites, pointing out potential hygiene and health issues as well as the absence of licenses to serve alcohol for such platforms.
<p>Germany</p> 	<ul style="list-style-type: none"> In 2014, Berlin banned regular short-term accommodation rentals in the most popular parts of the city without prior permission from the authorities. The city has banned unregistered vacation rentals in the city, citing a shortage of residential housing. Uber has stopped operations in three German cities citing a 'difficult regulatory environment'. Drivers were required to register as private rental car enterprise, which made the registration process too costly and lengthy for many. In 2014, 58% of alternative finance platforms think the proposed regulations affecting their sector are excessive and too strict, with only 13% thinking they are adequate. Lending platforms see the cap of €100,000 per loan that is applied to equity crowdfunding and P2P lending as holding back their business model.
<p>Italy</p> 	<ul style="list-style-type: none"> In May 2015, UberPop was banned for unfair competition practices following a ruling by the court of Milan. Uber has appealed the case. CoContest, a crowdsourcing platform giving anyone the opportunity to crowdsource ideas from architects & designers to refurbish an existing space, was recently criticized by 8 Italian MPs who asked the government to shut down the platform. However, Italy has recently proposed a 'sharing economy act'. This bill includes a clear definition of the sharing economy and sharing economy platforms, requires all platforms to sign up to a sharing economy registry and provide documents for the AGCM's (competition authority) approval. Another key tenet is the introduction of 'fairer' tax rates. Personal income from sharing economy platforms below €3k wouldn't be taxed, income under €10k will be taxed at a 10% rate, while revenues over €10k would be subject to the users marginal tax rate. It is estimated that taxes paid would be reduced by 56.5% for people earning less than €10k.
<p>Netherlands</p> 	<ul style="list-style-type: none"> The government has recently reviewed its regulations and prioritising support for the collaborative economy to grow. For instance, Minister Henk Kamp promised the emergence of technology-neutral regulations that would ensure that no workers are disadvantaged because of their technological choice (e.g. taxi drivers could replace their meters with applications like Uber's). The city of Amsterdam signed an agreement with Airbnb which explicitly permits renting accommodation via an online platform. In return, Airbnb has been collecting the applicable tourist tax since February 2015. Food-sharing companies such as ShareYourMeal can operate in the Netherlands as it is one of the only member states to differentiate between commercial and non-commercial food activities.

Figure 19.1 Comparison of regulatory and policy environment affecting SE in MED and non-MED member states [4]

Poland



- The Polish Ministry of Development has announced it will be opposing any regulation that attempts to hamper the development of the collaborative economy. It recently launched informal consultation with Polish collaborative economy platforms to collect information on red-tape barriers hindering their development.
- Collaborative economy businesses active in Poland are creating an association for the sector.
- Some crowdfunding platforms point out at the need to regulate their business. The lack of clear guidelines on how to apply tax law to crowdfunding and alternative finance in general is cited as a key issue for the users of these platforms.

Spain



- Peer-to-peer transportation platforms have been subject to regulatory pressure from local Spanish authorities. Uber has been banned nationally in December 2014 and is now trying to re-enter the Spanish market by only working with drivers who carry a valid professional VTC license (as required by all professional drivers). In 2015, Blablacar was sued by bus companies that claimed that its drivers should be considered as commercial enterprises (the case was defeated in the Spanish commercial court).
- P2P rental platforms are being regulated at a regional level – Catalonia was the first region to regulate short term lets by setting a cap on maximum availability of apartments per year, requiring owners to register for VAT with the city authority and providing evidence that nobody lives within the apartment.
- Alternative finance platforms are highly regulated. For instance, regulations limit the use of equity and debt crowdfunding to a maximum of €2m per project when non-accredited investors are involved and €5m per project when accredited investors are involved. In 2014, 74% of Alternative Finance platforms thought the proposed or existing regulations in Spain were too excessive.
- In March 2016, the Spanish regulator (CNMC) published preliminary results from a study on the collaborative economy that will recommend lifting all 'unjustified barriers' limiting the development of the collaborative economy.

Sweden



- In Alternative Finance, the regulatory environment is generally viewed as very positive and has stimulated the creation of local Swedish firms. However, the policy environment is more positive towards rewards-based crowdfunding, while the emerging regulations for P2P lending and equity crowdfunding were considered 'too strict' by 38% of alternative finance platforms in 2014.
- Sweden's 'sole trader' ('Enskild firma') status has proven to be a productive way for freelancers to initiate their businesses with very little amount of paperwork. It acts as a stepping stone towards other forms of enterprises.
- In the ridesharing sector, there are some cases of resistance to collaborative economy businesses. Despite not being banned in Sweden, UberPOP has seen a driver convicted for 'driving taxi goers without permission and without taxi legitimization' in September 2015.

UK



- The UK government has made the collaborative economy 'a priority' (Ed Vaizey) and aims to 'make the UK a global centre for the sharing economy' (Matthew Hancock).
- In October 2015, after Transport for London brought a case to court to determine whether the fare calculation system on Uber's app should be considered as a taximeter, the app was ruled as legal in London.
- After introduction of P2P lending and crowdfunding regulations by the FCA, 91% of Alternative Finance platforms in the UK regard the existing regulation as 'adequate and appropriate'.
- In 2015, the 'Deregulation act' relaxed planning permission rules in London for short-term lets. Previously, owners were required to apply to the Local Planning Authority for planning permission.
- The March 2016 Budget introduced two £1,000 tax-free allowances for property and trading income for any sole trader. This measure is billed as the "world's first sharing economy tax break" by the sharing economy sector and the Treasury estimates this could benefit more than 700,000 taxpayers. This move came in addition to the extension of the "Rent a Room" tax allowance on the first £7,500 of rental income from a room in a primary residence in 2015.
- In 2014, Eric Pickles (Communities Secretary) backed new government guidelines aimed at tackling parking congestion in busy areas, encouraging driveway sharing businesses such as Justpark.
- UK sharing economy platforms established a new industry association (SEUK) in 2015 that aims to promote and represent Sharing Economy businesses and facilitate trust between providers and customers.
- Innovate UK's IC Tomorrow programme has launched a competition that will see six sharing economy businesses awarded up to £30,000 each in categories such as 'trust in the sharing economy' and 'new sectors for the sharing economy'.

Figure 19.2 Comparison of regulatory and policy environment affecting SE in MED and non-MED member states [4]

To help to reap benefits of SE and to address concerns over the uncertainty about rights and obligations of those taking part in the SE European Commission issued a Communication titled “A European agenda for the collaborative economy” [10] with several conclusions related to SE services and platforms and MS regulations. We list key messages here:

When assessing whether market access requirements applied to the collaborative economy are necessary, justified and proportionate to meet identified and legitimate public interest objectives, Member States should take into account the specific features of collaborative economy business models.

For the purposes of regulating the activities in question, private individuals offering services via collaborative platforms on a peer-to-peer and occasional basis should not be automatically treated as professional service providers. Establishing (possibly sector-specific) thresholds under which an economic activity would be considered a non-professional peer-to-peer activity may be a suitable way forward.

Member States are advised to take the opportunity to review, simplify and modernize market access requirements that are generally applicable to market operators. They should aim to relieve operators from unnecessary regulatory burden, regardless of the business model adopted, and to avoid fragmentation of the Single Market.

Collaborative platforms are encouraged to continue taking voluntary action to fight illegal content online and to increase trust (for example by helping to ensure the quality of the services offered by providers of underlying services on their platform). Such voluntary measures should not automatically be taken to mean that collaborative platforms that benefit from the exemption from intermediary liability no longer do so.

In line with EU consumer and marketing rules, Member States are encouraged to seek a balanced approach to ensure that consumers enjoy a high level of protection in particular from unfair commercial practices, while not imposing disproportionate information obligations and other administrative burdens on private individuals who are not traders but who provide services on an occasional basis.

The effectiveness and use of online trust mechanisms (e.g. quality labels) to increase trust and credibility should be improved to encourage a more confident participation in the collaborative economy.

In order to help people make full use of their potential, increase participation in the labour market and boost competitiveness, while ensuring fair working conditions and adequate and sustainable social protection, Member States should:

- assess the adequacy of their national employment rules considering the different needs of workers and self-employed people in the digital world as well as the innovative nature of collaborative business models;
- provide guidance on the applicability of their national employment rules in light of labour patterns in the collaborative economy.

Member States are encouraged to facilitate and improve tax collection by using the possibilities provided by collaborative platforms, as these already record economic activity.

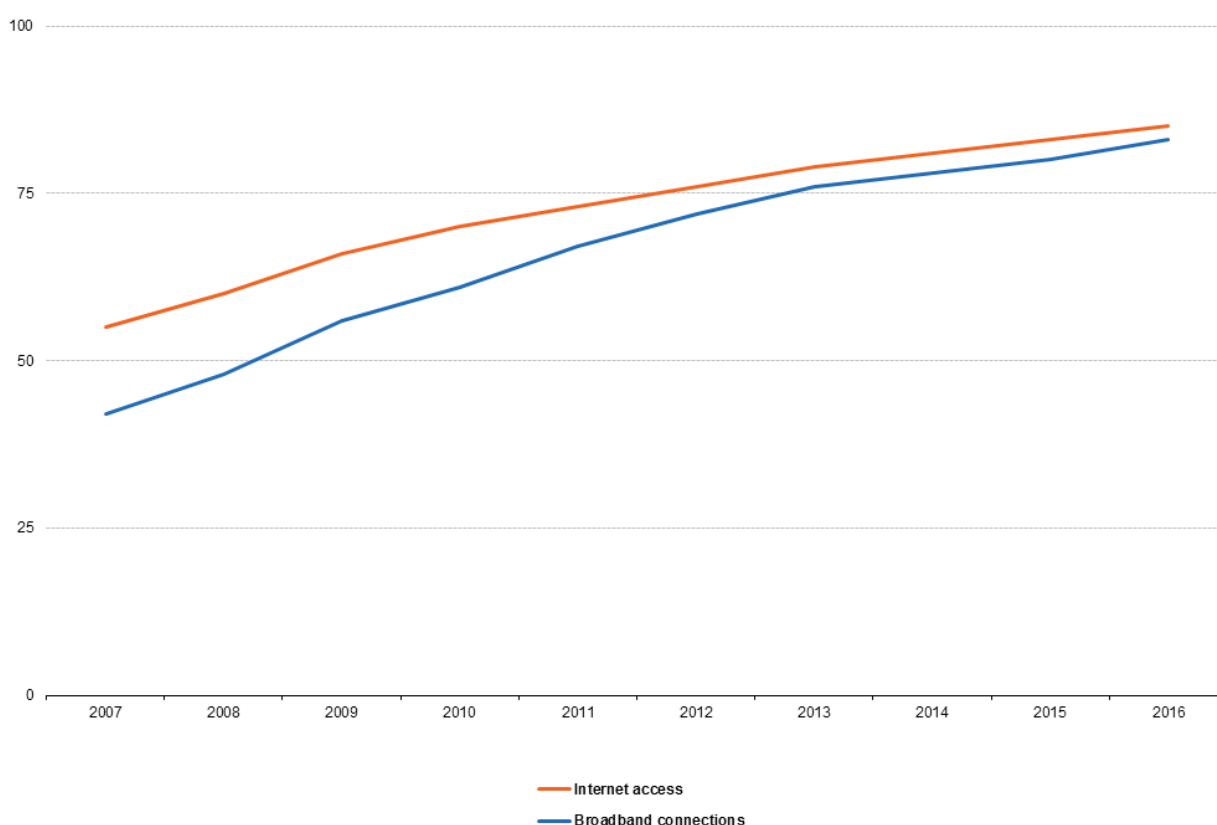
Collaborative platforms should take a proactive stance in cooperating with national tax authorities to establish the parameters for an exchange of information about tax obligations, while ensuring compliance with legislation on the protection of personal data and without prejudice to the intermediary liability regime of the e-Commerce Directive.

Member States are invited to assess their tax rules to create a level playing field for businesses providing the same services. Member States should also continue their simplification efforts, increasing transparency and issuing online guidance on the application of tax rules to collaborative business models.

5. Technology foundations for sharing economy

5.1. Digital Single Market: Internet and Broadband in Member States

Key technology enabler for all SE services is Internet access. The diversity of broadband and other Internet access state of the art in each member state creates difference in levels of SE service that can be provided. It is therefore of importance to compare developments in example MED and non-MED countries to get better understanding of needed technology investments and regulatory actions that precede expansion of SE services.

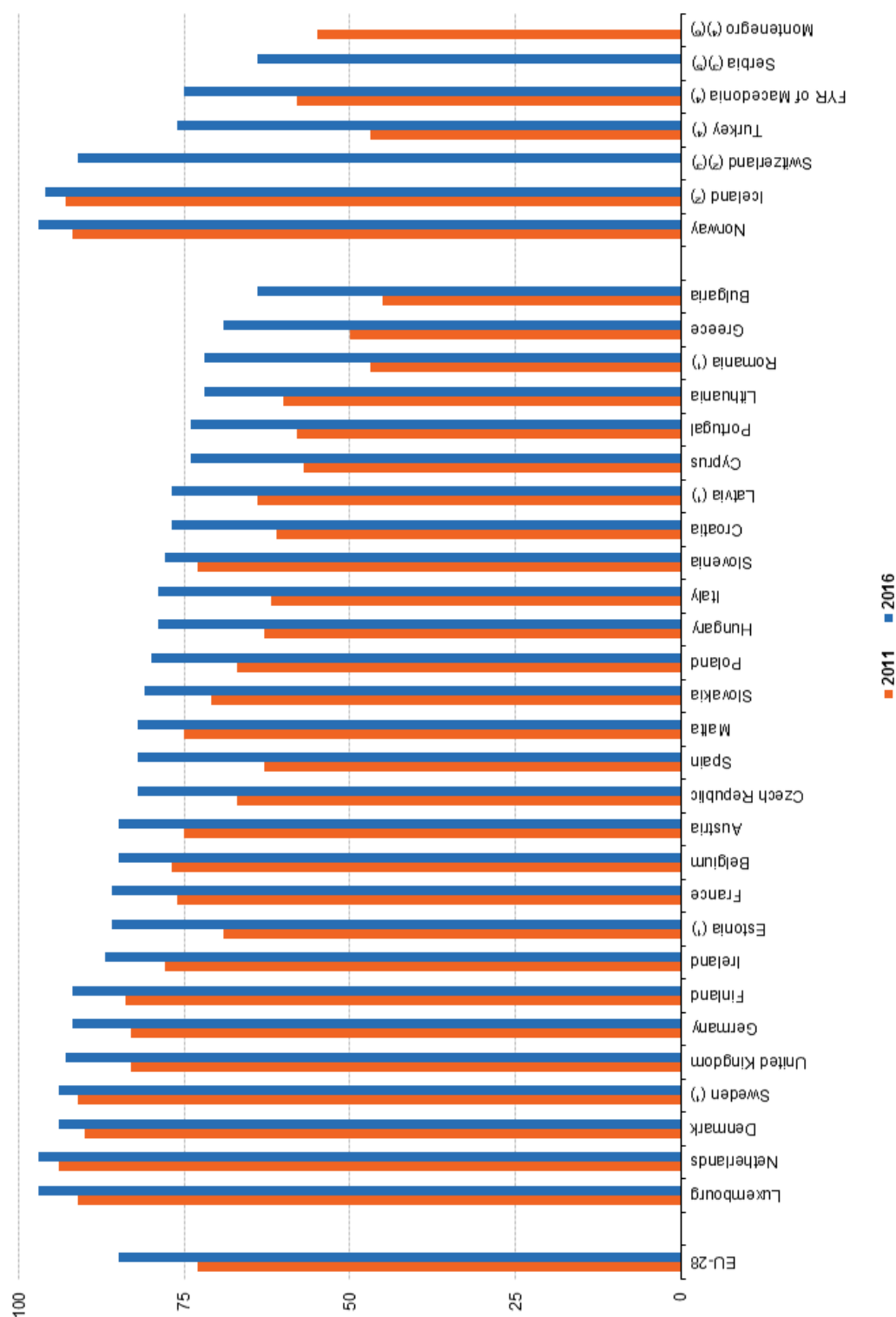


Source: Eurostat (online data codes: isoc_ci_in_h and isoc_ci_it_h)

Figure 20. Internet access in households in EU (%_of_all_households) [9]

From Figure 20 [9] we can see that broadband access is more and more available throughout Europe, but from Figure 21 [9] we can see how MED countries are still not among leading countries.

Good thing is that narrowing the gap is quite visible in some MED countries compared to 2011. E.g. Spain, Italy, Croatia and Greece have significantly advanced in the last 5 years compared to some other countries.

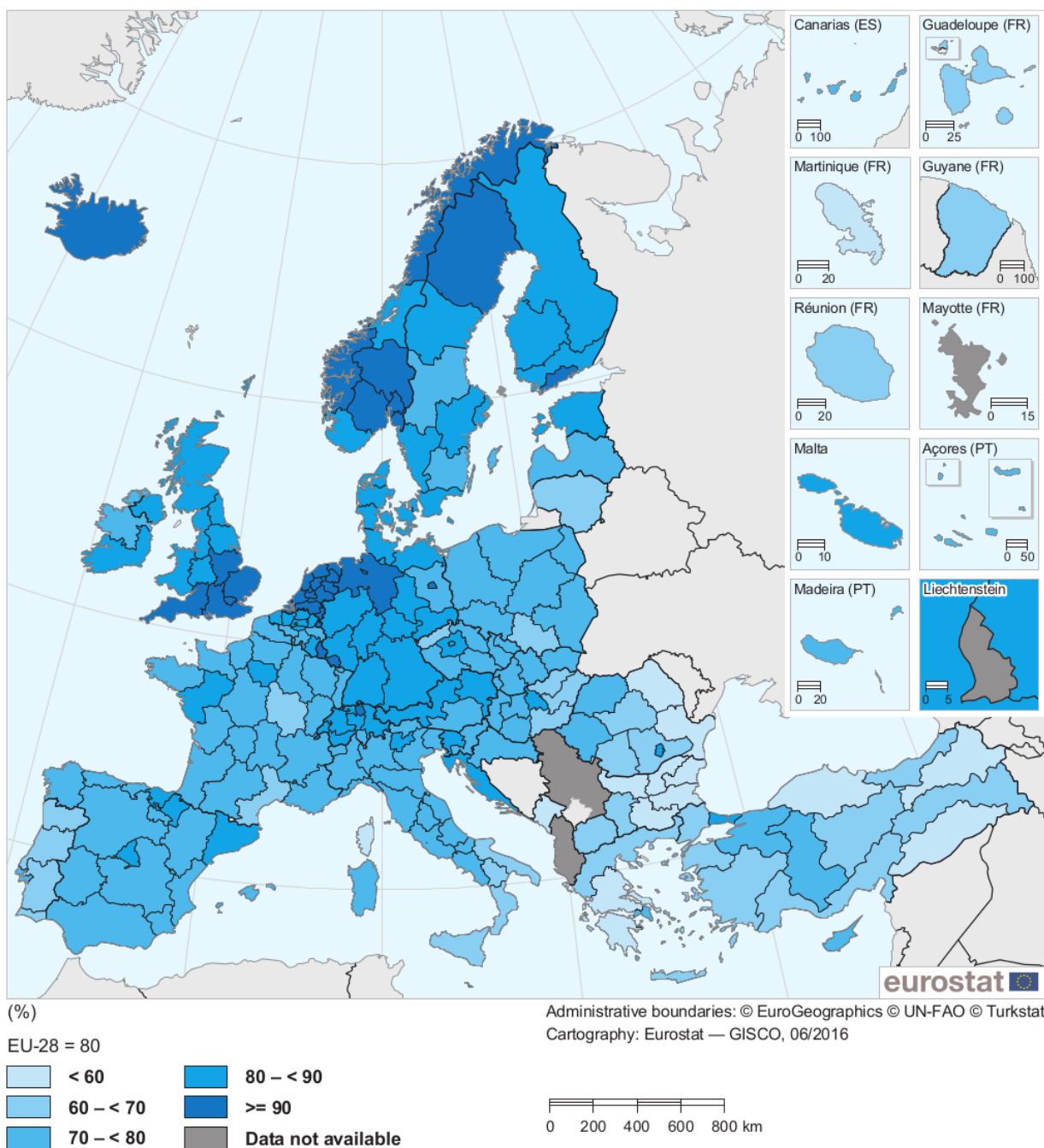


(*) Break in series.
 (*) 2014 instead of 2016.
 (*) 2011: not available.
 (*) 2012 instead of 2011.
 (*) 2015 instead of 2016.
 (*) 2016: not available.
 Source: Eurostat (online data code: isoc_ci_in_h)

Figure 21. Comparison of internet access in households in different states [9]

Another interesting comparison is when we look at data at regional level (Figure 22 [11]). In that figure we can see relative differences among some MED regions. On average, MED regions do have lower percentage than most advanced EU regions but there are visible differences even within MED regions.

Proportion of households with broadband connections, by NUTS 2 regions, 2015 (*)
(%)

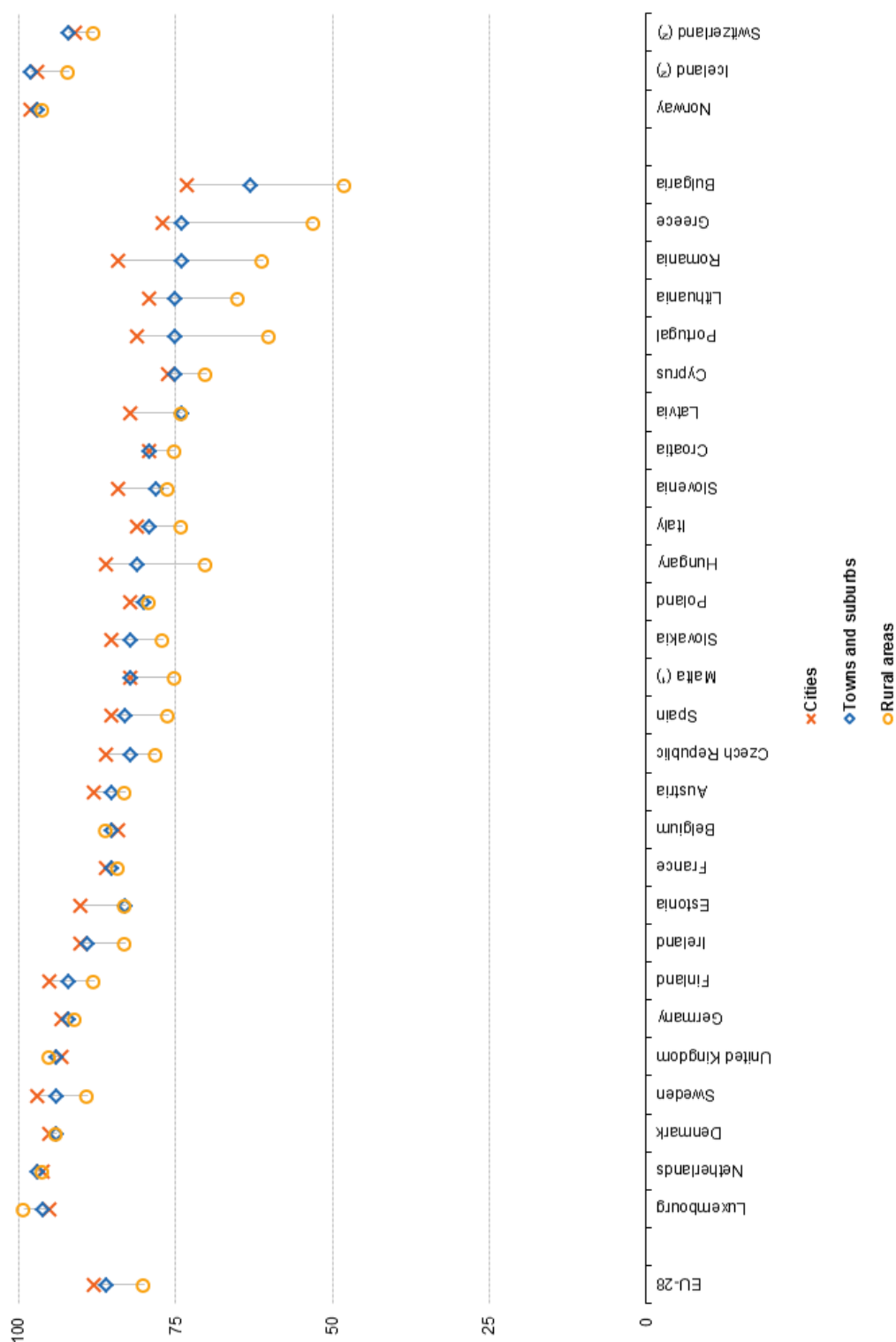


(*) Germany, Greece, Austria, Poland, the United Kingdom and Turkey: NUTS level 1. Iceland and Switzerland: 2014. Montenegro: 2012. Corse (France): low reliability.

Source: Eurostat (online data codes: [isoc_r_broad_h](#) and [isoc_ci_eu_h](#))

Figure 22. Comparison of households with broadband connection per EU regions
[11]

Yet another comparison is based on degree of urbanization in various states (Figure 23 [9]). This comparison is indicative since it shows that in some MED countries there is a large difference in Internet access capabilities in rural areas. We have to take this as a call for action, since introduction of SE and thus economic activities cannot be started if there is no Internet access.



Note: ranked on overall internet access.
 (*) Rural areas: low reliability.
 (**) 2014.
 Source: Eurostat (online data code: isoc_ci_in_h)

Figure 23. Comparison of internet access in households by degree of urbanization in different states [9]

5.2. Use of mobile devices

Mobile devices are today preferred device to access various SE platforms and services using the internet connection. Comparison of mobile phone usage per country given in the Figure 24 [11] below gives some important information on M&D region.

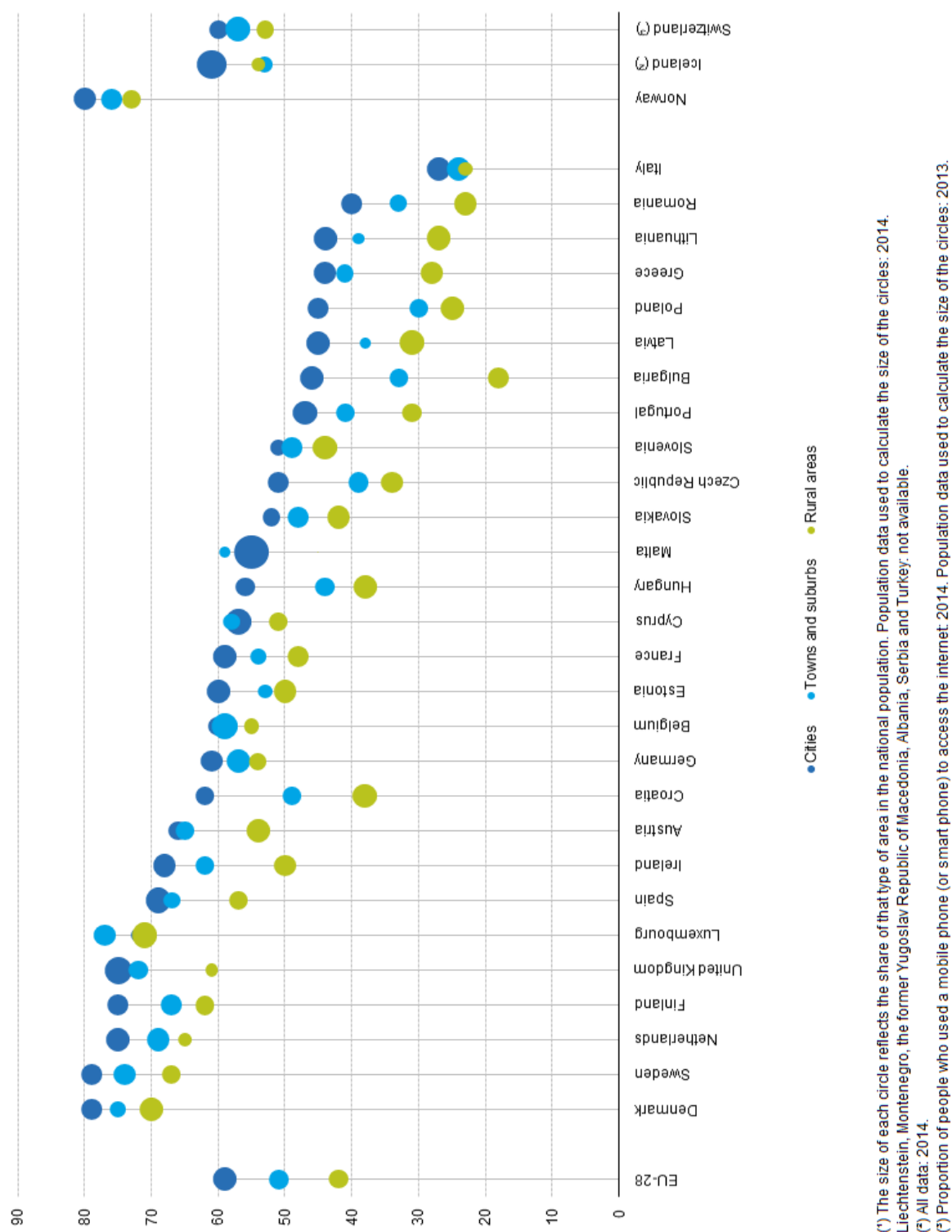


Figure 24. Proportion of people who used a mobile phone (or smart phone) to access the internet, by degree of urbanization [11]

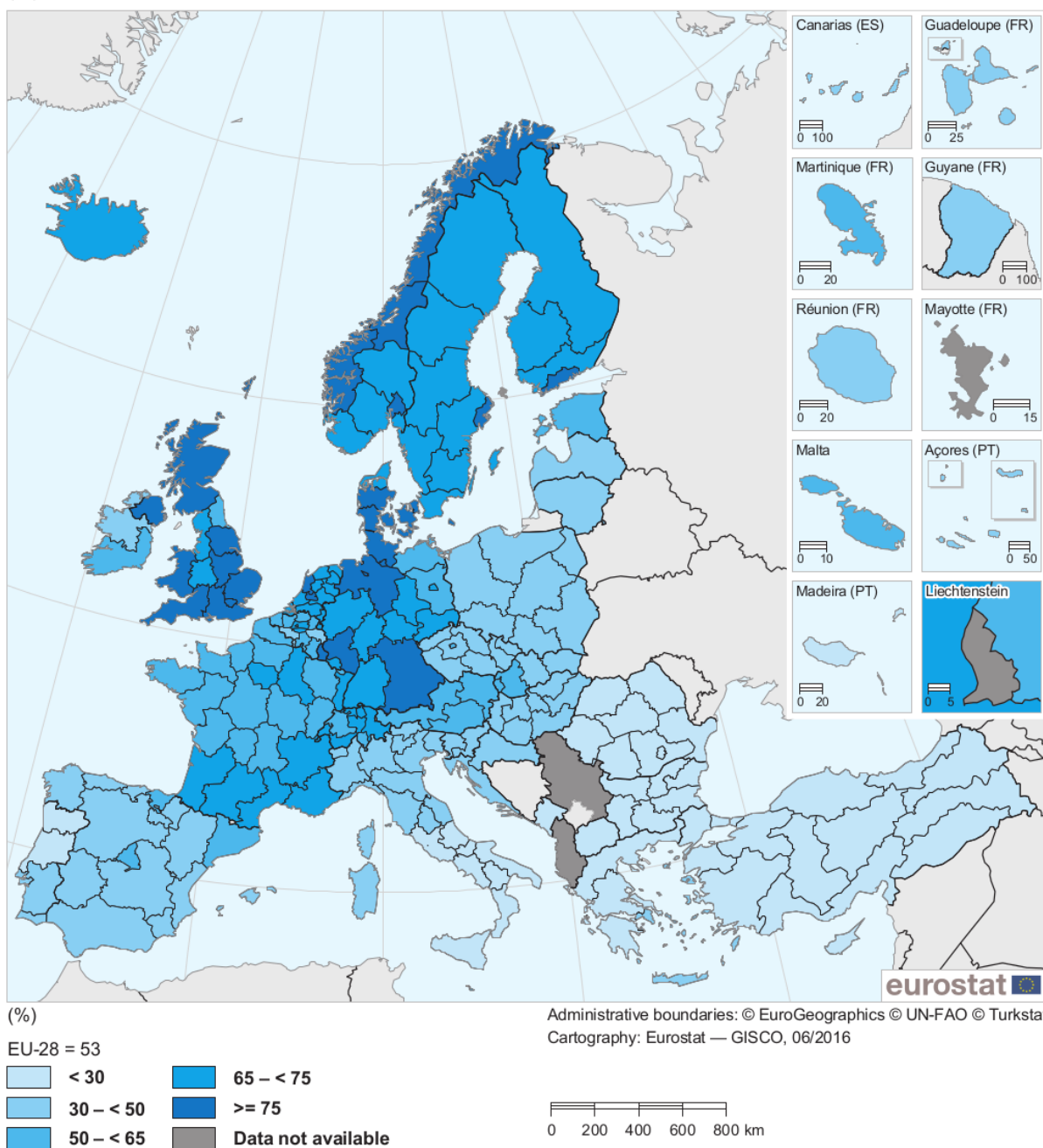
As it can be seen from the figure some MED countries (Spain, Croatia) are above EU average in use in cities. While Spain is still good positioned in analysis in towns and rural areas, use of mobile phones for Internet access in rural areas of Croatia

significantly drops (which is similar in some other MED countries). Unfortunately, the analysis also shows that Italy, as MED country, is at the end of the list compared to other EU countries.

Similar, unsatisfactory results for SE development in MED regions can be seen in Figure 25 [11] that clearly shows how MED regions, apart from slightly better results in France, lag in using Internet for buying SE services.

Another good analysis is given in Figure 26 [11]. While most MED countries are below average involved in purchases in typical SE market segments (clothes and sports goods, travel/holiday accommodation, household goods) and especially in rural areas, those graphs can serve excellent purpose of identifying most attractive markets for offering SE services. This is especially important for prospective new companies from MED regions that have the intention to start new SE platforms/services.

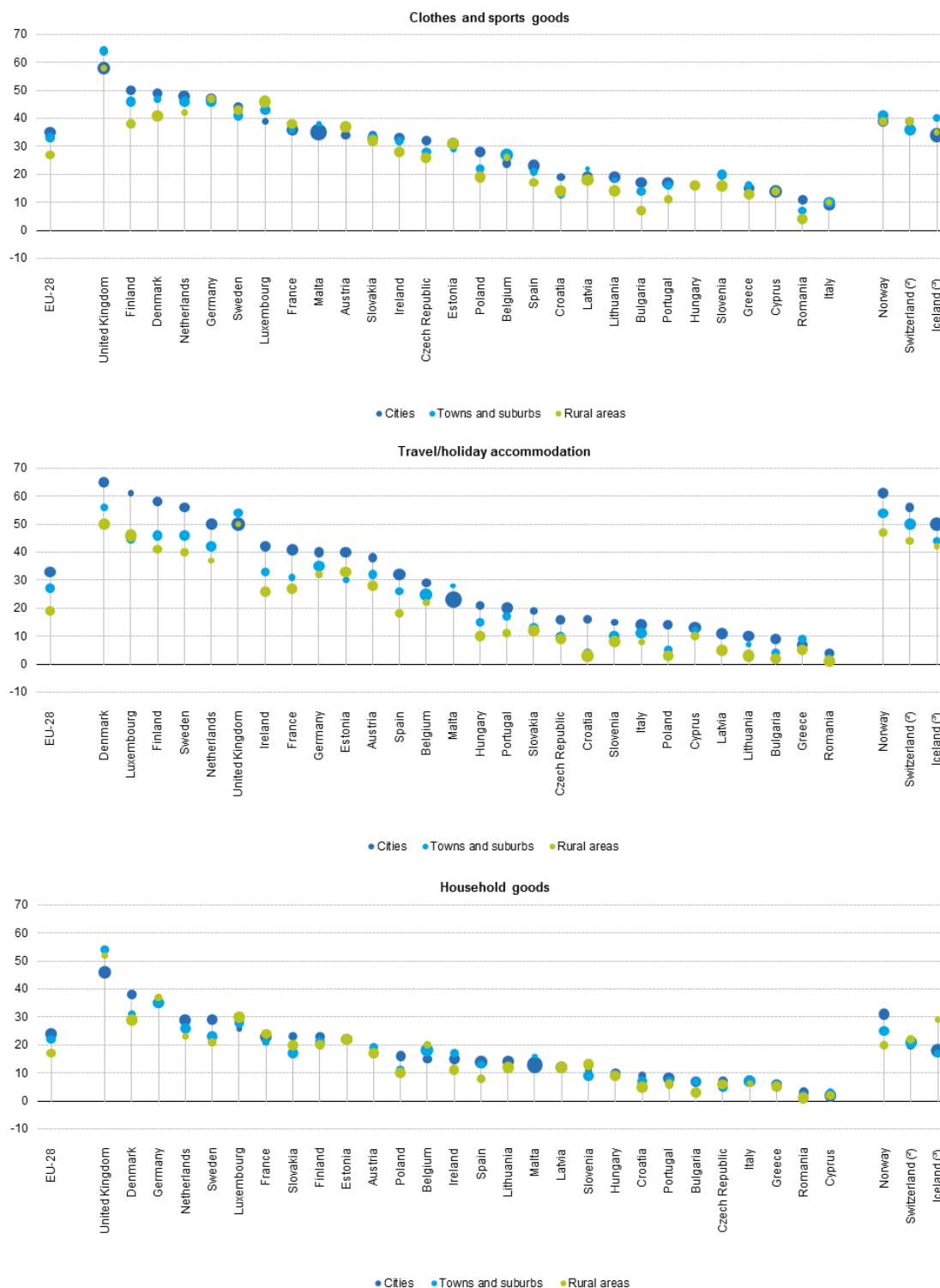
Proportion of individuals who bought goods or services over the internet for private use, by NUTS 2 regions, 2015 (*)
(%)



(*) Germany, Greece, Austria, Poland, the United Kingdom and Turkey: NUTS level 1. Iceland and Switzerland: 2014. Montenegro: 2012. Corse (France): low reliability.

Source: Eurostat (online data codes: [isoc_r_blt12_i](#) and [isoc_ec_ibuy](#))

Figure 25. Proportion of people who purchase over the internet by regions [11]



(*) The size of each circle reflects the share of that type of area in the national population. Population data used to calculate the size of the circles: 2014. Liechtenstein, Montenegro, the former Yugoslav Republic of Macedonia, Albania, Serbia and Turkey: not available.
 (*) Proportion of people who bought goods and services over the internet: 2014. Population data used to calculate the size of the circles: 2013.
 (*) All data: 2014.

Figure 26 Proportion of people who purchase over the internet by countries, by degree of urbanization [11]

6. Comparison of national strategies for internet/broadband access

All analyses show that the ability to access the internet is a key technology enabler to any and all sharing economy activities. Hence, the comparison of national strategies for internet/broadband access plays significant role in complete comparison.

Here we provide some strategic information on member states of partners in this project, other MED member states as well as some advanced member states for the purpose of comparison.

For each MS we present info on:

- Summary of broadband development
- Main aims for broadband development
- Main measures for broadband development
- National broadband financial instruments

We have taken information from most recent EU document on broadband in MS [6]. Further data on countries listed below and other countries can be found in the original document.

6.1. Country information - Croatia

Croatia's strategy contains some basic principles such as service and technological neutrality, net neutrality and inclusion of broadband internet access among universal services.

6.1.1. Summary of broadband development in Croatia

There are specific objectives arising from the Croatian Broadband strategy. These include ensuring effective competition, availability of broadband access and encouraging demand for broadband services by citizens and business entities. In underserved areas, the Croatian strategy suggests ensuring broadband access by applying mobile communications technologies, such as UMTS, LTE and WiMAX.

6.1.2. Main aims for broadband development

The Croatian National Broadband (NGN) Plan consists of four parts:

- Strategy for Broadband Development in the Republic of Croatia for 2016–2020
- Project of unification and better management of surplus of fibre optic infrastructure of public companies majority-owned by the Republic of Croatia (OSI)
- National Framework Programme for the Development of Broadband Infrastructure in Areas Lacking from the Sufficient Commercial Interest for Investment (ONP)
- National programme for backhaul broadband infrastructure (NP-BBI)

The Strategy for Broadband Development in the Republic of Croatia for 2016–2020, adopted in July 2016, aims at achieving full broadband deployment by a technology neutral approach ensuring conditions for an open and equal legislative framework. The strategy also focuses on the encouragement of broadband supply and demand for electronic services as well as on ensuring effective competition in the telecommunications sector. Croatia's overall broadband objectives are convergent with the DAE (100% coverage with 30 Mbps and 50% take-up rate for 100 Mbps until 2020). The estimated budget for the implementation of the Strategy measures is circa EUR 770 million.

6.1.3. Main measures for broadband development

- Broadband mapping: HAKOM has developed and updates a central mapping tool, Interactive GIS portal, which provides information about the availability of broadband access, a consolidated plan of mobile communications operators as well as publications of intents for deployment and bandwidth speeds.
- Project of unification and better management of surplus of fibre optic infrastructure of public companies majority-owned by the Republic of Croatia (OSI) was launched in January 2013. The main objective is the integration and better management of surplus fibre optic infrastructure of public companies, that represents a core part of the Croatian broadband network with a length of 8.000 kilometres.

6.1.4. National broadband financial instruments

The National Programme for the Development of Broadband Backhaul Infrastructure in Areas Lacking Sufficient Commercial Interest for Investments (ONP) is a national (umbrella) broadband state aid scheme. Besides general state aid rules, ONP also brings guidelines for local municipalities for implementation of individual projects within ONP. The total estimated (maximum) funding at the national level for the framework programme amounts to EUR 252 million, of which 117.2 million EUR is to be financed from ERDF and the remaining EUR 134.8 million to be covered by the EIB loan. Both sources of funding (ERDF and EIB loan) represent grants for public authorities at local and regional level (cities, municipalities and counties). It is expected that the contribution of private funds in co-financing NGA broadband networks during the implementation of the Programme will amount to EUR 207 million. The average annual budget of the Programme in 2016 - 2023 amounts to EUR 31.5 million. The Croatian Regulatory Authority for Network Industries (HAKOM) has been determined as a holder of the ONP.

The national programme for broadband backhaul infrastructure (NP-BBI) covers state aid measures for backhaul portion of NGN network in white areas and aims at developing the national NGN broadband backhaul, as a network segment interconnecting NGA networks and national core networks. The Programme will be carried out through a public investment model. The passive fibre infrastructure will be designed and built and retained in permanent public ownership. After the infrastructure is built, it will be offered to operators at the market at equal terms. Based on the results of public consultations, the Programme aims to cover at least 540 settlements, which are initially prioritised and set as targeted settlements (at least 25% of population), located in suburban and rural areas of Croatia. The overall estimated (maximum) budget of the measure is EUR 101.4 million, of which EUR 86.2 million (85%) will be funded by ERDF and the remaining EUR 15.2 million (15%) by national funds. The annual budget of the scheme amounts to EUR 14.5 million for the period 2017-2023.

6.2. Country information - Slovenia

Slovenia's aim is to provide broadband internet access speeds of at least 100 Mbps to 96% of households by 2020.

6.2.1. Summary of broadband development in Slovenia

The Slovenian Plan for the development of next-generation broadband networks until 2020 aims at providing 96% of households with speeds of at least 100 Mb/s by 2020, and 4% of households with at least 30 Mbps. New financial resources are planned to be mobilised from European Structural Funds for the programming period 2014-2020 to deploy broadband infrastructure in white areas.

6.2.2. Main aims for broadband development

The Government of the Republic of Slovenia adopted (March 2016) a strategic paper on the development of the information society: the Development Strategy for the Information Society until 2020 – Digital Slovenia 2020. This framework strategy lays down Slovenia's key strategic development goals in this area and combines the Next-Generation Broadband Network Development Plan to 2020 and the Cyber Security Strategy together into a unified strategic framework. The Slovenian Next-Generation Broadband Network Development Plan to 2020 (Načrt razvoja širokopasovnih omrežij naslednje generacije do leta 2020) was issued in 2015 and updated in March 2016. In late 2016, the Slovenian government tested and received positive response on commercial interest in the low population density areas. Slovenia aims at providing 96% of households with speeds of at least 100 Mbps by 2020, and the remaining 4% with at least 30 Mbps. The take-up target is not mentioned. The plan follows the EU 2020 strategy and sets strategic objectives in the field of broadband infrastructure as well as the strategic basis for the use of funds from the European Regional Development Fund and the European Agricultural Fund for Rural Development.

6.2.3. Main measures for broadband development

- Regulation measures:

Legislative and regulatory measures are being implemented to promote and ensure both competition and the timely achievement of the desired goals concerning the expansion of Slovenia's broadband networks. They aim to improve regulatory predictability and removing barriers to investment, making Slovenia more attractive to investors. A public view of operational data is available.

- State aid and other measures:

Slovenia plans to mobilize new financial resources from the Structural Funds for the programming period 2014-2020 and will support the expansion of broadband

networks by implementing cost reduction methods from which all operators may benefit. These include detailed mapping and coverage analyses, open tenders and regulatory measures ensuring open access networks and the use of existing infrastructure.

- Broadband mapping:

An infrastructure mapping tool PROSTOR is developed by the Ministry of Environment and Spatial Planning - the Surveying and mapping Authority of the Republic of Slovenia. The mapping system presents graphical form of the data on ducts, cables, nodes, base stations, etc. The system gathers data on electronic communication operator's facilities, mainly location and type of networks used. The access to information is partially restricted.

6.2.4. National and regional broadband financial instruments

- State Aid (special activities – ERDF & EAFRD): According to the Next Generation Broadband Network Development Plan until 2020, the total estimated cost for developing the broadband according to the targets are EUR 365 million. Plans for the use of the European Structural and Investment Funds in 2014-2020 foresee an overall allocation of EUR 72.5 million of EU resources for broadband deployment above 100 Mbps. EUR 50 million are to come from the European Regional Development Fund (ERDF) and to be topped by the EUR 12.5 million of national co-financing. The EUR 7.5 million from European Agricultural Fund for Rural Development (EAFRD) are to be supported with further EUR 2.5 million of national co-financing. This will be accompanied with EUR 292.5 million of other financials sources and private financing. However, the ERDF and EAFRD (including national co-financing) funds were reduced and it is estimated that EUR 34.5 million will be used to reach the target.

6.3. Country information - Italy

The Italian strategy for next generation access network aims at developing a high speed access network to cover 85% of population with an infrastructure able to guarantee services above 100 Mbps and above 30 Mbps for all by 2020. Italy adopted a national state aid scheme to support ultra-broadband in market failure areas.

6.3.1. Summary of broadband development in Italy

Italy's national ultra-broadband plan, the Strategy for next generation access network (Strategia Nazionale per la Banda Ultra-Larga, SNBUL), was approved by the Council of Ministers in March 2015. It aims at developing a high speed access network. Within the frame of SNBUL, Italy adopted a national state aid scheme, approved by the European Commission in June 2016, to support ultra-broadband in market failure areas.

Italy's 2011 broadband plan aims at erasing the digital divide and raising the connectivity from 2 to 20 Mbps in market failure areas. There is also a concept for boosting optic fiber roll out and implementing fixed and mobile broadband. In order to antagonize the digital divide there has been an auction for spectrum resources in the 800 MHz band that supports the deployment of Long Term Evolution Technologies (LTE) in remote areas.

6.3.2. Main aims for broadband development

The plan from 2011 constituted the basis for a national state aid scheme approved in 2012 (SA34199(2012/n)).

It defines three different priorities depending on the type of intervention to be carried out to implement the broadband infrastructure.

- Type A: focuses on the development of next-generation access (NGA) networks in public ownership.
- Type B: addresses telecom operators for the implementation of project investment in infrastructure in the last mile access network.
- Type C: provides support to users in isolated areas.

The 2015 Italian strategy for next generation access network (SNBUL) has the general objective of developing a future-proof telecommunications infrastructure through the country. The plan intends to:

- bring connectivity with a minimum of 100 Mbps for up to 85% of the Italian population,
- guarantee coverage of at least 30 Mbps to all citizens,
- cover at least at 100 Mbps offices and public buildings,
- bring high speed broadband in the industrial areas.

The tools implemented within the SNBUL strategy are:

- administrative simplification and reduction of burdens,
- creation of tax exemption tools for infrastructures operations,
- stimuli for triggering the demand,
- direct public sector execution of works in market failure areas,
- land registry creation (SINFI) to locate all the infrastructures above and below the ground.

6.3.3. Main measures for broadband development

- State aid measure (SA41647(2016/N)): A planned total budget of EUR 4 billion composing of national and regional funds has been made available to build a passive public infrastructure managed with a wholesale-only model in market failure areas and opened to all the operators. Further measures are under study to match the desired targets in gray and black areas too.
- To speed up the diffusion of broadband networks, Italy implemented the EU Directive 61/2014 “on measures to reduce the cost of deploying high-speed electronic communications networks” by adopting the Legislative Decree n. 33 in February 2016.
- Italian authorities have also reassessed the market demand and the existing use of the 3600-3800 MHz band and adopted the tender rules in order to assign different kind of lots for urban and rural coverage in 2015. This was done in order to sustain the diffusion of both fixed and mobile broadband networks. A website on ultra-broadband issues has been set and launched in march 2016 in order to increase the transparency of the governmental action and to update the citizens step by step towards the 2020 final targets.
- In August 2015, the inter-ministerial committee for economic programming (CIPE) committed a total amount of EUR 5 billion of public funding to sustain the SNBUL, allocating EUR 2.2 billion to cover the market failure (white) areas. In these white areas in particular, the state aid scheme provides a direct model of investment to build a passive public infrastructure managed with a wholesale-only model and open to all operators.

- Broadband mapping: the main broadband mapping portal for Italy is infratelitalia detailing levels of coverage up to the municipal level, the time frame of public interventions, the technical parameters, the bureaucratic permit profiles as well as the types of civil works carried out in each lot.

6.3.4. National and regional broadband financial instruments

- EUR 5 billion of national funds (FSC) for actions including white, gray and black areas
- EUR 1.6 billion from 18 ERDF Operational Programmes (POR) and 21 EAFRD Development Rural Programs (PSR)
- EUR 233 million from a National Operating Programme including funding of ultra-broadband investments to set up 100 Mbps connections of business companies and enterprises in industrial areas

6.4. Country information - Spain

Targeted 100% coverage with 30 Mbps and 50% of households subscribing to internet connections above 100 Mbps by 2020 are in line with DAE targets.

6.4.1. Summary of broadband development in Spain

Spain's national broadband strategy (Digital Agenda for Spain) supports the goals related to broadband coverage set by the European Union in the Digital Agenda for Europe (DAE). Spain intends to have broadband networks deployed by the private sector. In regions where market-based deployment fails due to a lack of profitability, the public-private cooperation mechanisms are planned to be settled.

6.4.2. Main aims for broadband development

One of the goals of the Digital Agenda for Spain is to foster the deployment of networks and services by setting up a regulatory framework that guarantees certainty and prevents the introduction of unnecessary barriers.

It also provides strategies to deploy ultra-fast networks and provide an efficient radio spectrum management. The Digital Agenda proposes mechanisms for improving the experience of broadband service users, increasing the demand of digital services and promoting the production and distribution of digital content over the Internet.

The objectives of the Agenda are to reach a 100% coverage of 30 Mbps and 50% take up of 100 Mbps and more of households by 2020.

The Digital Agenda for Spain contains 9 specific plans, including a plan dedicated to Telecommunications and Ultra-fast Networks. This plan contains measures to:

- foster ultrafast fix access networks (regulatory measures to reduce roll-out cost, better use of existing infrastructure, public-private cooperation in deployment, and coordination with other administrations),
- foster ultrafast mobile access networks (accelerating 4G deployment thanks to new spectrum, simplifying roll out requirements and universal access to ultrafast mobile broadband -30 Mbps- in centres with less than 5000 inhabitants) and
- support take-up.

Spain follows a technology neutral approach as benefits of using the full range of technologies can be seen in rural areas. Particularly in those areas in which deployments by private companies are limited (such as rural, remote or dispersed areas), the strategy addresses the use of support and public-private cooperation mechanisms.

At regional level, various regions (Comunidades Autónomas - CCAA) have developed their own projects, programmes and strategies for overall digital development and broadband rollout e.g. Galicia, Valencia, Basque Country, Aragón, Andalusia, Catalonia or Castilla y León. These initiatives rely on their own financial resources, private sector investments as well as on European funds.

6.4.3. National and regional broadband financial instruments

- The Digital Agenda for Spain addresses an EUR 200 million programme to extend next-generation broadband, which will provide financial support to bring at least 100 Mbps connectivity to small and medium-sized municipalities in white areas and improve backhaul and access networks providing at least 30 Mbps connectivity in other white areas.
- The Secretary of State for Information Society and Digital Agenda plans to dedicate EUR 277 million to develop actions co-financed by the ERDF under the Operational Programme 2014-2020 Smart Growth.

6.5. Country information - France

The national broadband programme of France sets out the targets of ultrafast broadband access for all households by 2022.

6.5.1. Summary of broadband development in France

France commits to covering their entire territory with high-speed broadband by 2022. The National Broadband Plan, France Très Haut Débit (pdf) was published by the French Government in 2013 and updated in 2015.

6.5.2. Main aims for broadband development

The French broadband target is to achieve 100% coverage with 100 Mbps by 2022. France's broadband targets exceed the DAE, albeit with a longer time frame. France predominantly opts for establishing and widening its broadband network infrastructure through FTTH technology.

6.5.3. Main measures for broadband development

Broadband mapping: the French High Speed Broadband Observatory (Observatoire France Très Haut Débit) is a mapping tool developed by the High Speed Broadband Unit (francethd), which allows users to view possible downstream speeds (DSL on copper, coaxial cable and fiber-optic) at household or organization levels .

Other measures: The French Government published a convention agreement on the modalities of FTTH deployment, *Modèle de Convention de programmation et de suivi des déploiements FttH 2013* (pdf) as well as specifications for network development project applications in its broadband strategy (France Très Haut Débit - Réseaux d'initiative publique [2013] 2015). The Government has also made public a list, which is continuously upgraded, including the network-roll-out projects initiated under the French Broadband Plan.

6.5.4. National and regional broadband financial instruments

French officials expect that the national strategy will require mobilisation of private and public investments of up to EUR 20 billion. The Fund for the Digital Society (Fonds pour la société numérique) provides a combination of public loans and funding to support the roll-out of ultrafast broadband by the French government. Infrastructure projects that are eligible include works on backhaul networks (FTTN), passive optical fibre networks (FTTH), customer access (FTTH), access for public

institutions (education, health, public administration), support for Wi-Max and/or satellite receivers as well as feasibility studies for planned roll-out projects.

6.6. Country information - Greece

Greece has a high percentage of users that have access to 10 Mbps and a good percentage of users that have access to 24 Mbps connectivity.

6.6.1. Summary of broadband development in Greece

The National Broadband Plan for 2014-2020 was prepared in cooperation between the responsible Ministry, relevant public bodies (e.g. HTPC) and representatives of the market. Competitive forces are a key factor to achieving the coverage targets.

6.6.2. Main aims for broadband development

The Next Generation National Broadband Plan (pdf) is built on the following two pillars:

- Pillar A: favourable environment for private investment in next-generation networks (investment, legislative and regulatory) to achieve maximum utilization of private resources (both from within and from abroad) towards the development of NGA infrastructure.
- Pillar B: Visible public support for the extension of broadband next-generation infrastructure in areas and markets in which they prove that there is no or little interest in developing relevant infrastructures and services:
 - o Action: Rural Extensions designed to cover areas predicted to remain "white areas NGA" after the implementation of investment projects and heralded the implementation of a project under Rural Broadband
 - o Action: Super-Fast Broadband aims to achieve connectivity of 50% of households with speeds of at least 100 Mbps, always in combination with the coverage achieved by private investment.

Long term NGA aims are 100% coverage with 30 Mbps and 50% households' penetration with 100 Mbps by 2020.

6.6.3. National and regional broadband financial instruments

- Existing actions that are both broad categories of interventions of the National Broadband Plan already financed by resources of the NSRF ("Digital Convergence")
- Supporting projects of institutional actions Pillar A funded by Partnership Agreements (FTA) for the years 2014-2020, as well as any new action in the context of stimulating demand for broadband services.
- For the implementation of two new projects in Pillar II financial resources and from "Corporate Pact for Development Framework - NSRF 2014-2020" will be used, as well as private investment.
- For the implementation of this plan, resource utilization and the Connecting Europe Facility will be sought .
- Finally, additional amounts for actions described in this document that cannot be financed by NSRF or FTA2014-2020, funds will be drawn from the Public Investment Programme.

6.7. Country information - Sweden

Sweden's national broadband plan states that 90% of all households and businesses should have access to broadband at a minimum speed of 100 Mbps by 2020.

Summary of broadband development in Sweden

The Swedish government proposes initiatives in several areas in order to meet the goal of providing 90% of all households and businesses with 100 Mbps by 2020 and to set the necessary market conditions. This includes the provision of good conditions for competition, a revised model for spectrum management and the promotion of investments in more isolated and remote areas. The government has also launched a broadband forum to enable dialogue and collaboration facilitating the deployment of broadband.

6.7.1. Main aims for broadband development

Sweden's national broadband strategy was adopted in 2009 and will continue to be in force upto 2020. It focuses mainly on providing legal and regulatory frameworks that intend expansion of the country's broadband networks, primarily,

at the hands of market operators. The government is determined to stimulate broadband projects in remote areas that are otherwise economically unviable. Sweden ranks FFTH-connections as the most desirable. Sweden's long term objective is to achieve 90% coverage with 100 Mbps by 2020.

6.7.2. Main measures for broadband development

- **Broadband mapping:** In Sweden, a web service Ledningskollen has been developed and steered by the Swedish post and telecom authority (NRA) with the aim of sharing information on infrastructure owners (i.e. pipelines and other infrastructure). The platform has been developed and is publicly accessible on a voluntary basis in order to prevent damage during excavation and enhance coordination in civil work. In addition to the Ledningskollen, PTS has a national mapping tool called the Broadband Map (Bredbandskartan) which shows the availability of broadband, network owners and ISPs near a specific location throughout Sweden.
- **Regulation measures:** The New Planning and Building Act provides both opportunities and obligations to manage electronic infrastructure in the physical plans and submits the building permit matters. Electronic communication has been incorporated as a public interest and the ability to determine land reserves for equipment for electronic communications clarified.
- **Other measures:** The Government has launched a Broadband Forum as well as a network of the regional broadband coordinators to work towards the objectives of the broadband strategy. The aim is to create a platform for dialogue and collaboration for broadband development.

6.7.3. National and regional broadband financial instruments

- **State Aid:** A budget of SEK 775 Mio (approximately 88,4 Mio EUR) of which SEK 475 million have been financed from national funds and SEK 300 million from EAFRD and allocated for the development of broadband-infrastructure in rural regions.
- **Other measures:** Sweden has a national strategy for the extension of broadband to rural and isolated areas. Investments in this case are driven by consumer aggregated demand. Local communities and non-profit organisations often take the initiative. They are encouraged by regional and national coordination and support activities like the so-called co-financing of broadband projects, ensured

through State aid measures and supported by the European Agricultural Fund for Rural Development (EAFRD) as well as by the European Regional Development Fund (ERDF).

- The Swedish Board of Agriculture assigned EUR 174.2 million (including national co-financing) from the Rural Fund for 730 NGA deployment projects (access networks) mainly led by local non-profit organisations and municipalities.
- In addition, the Swedish Agency for Regional and Economic growth assigned EUR 73 million (including national co-financing) from the Regional Fund for 48 projects for networks supporting NGA (link between the core and access networks), granted to local municipalities, provincial or regional offices, local energy companies and other undertakings.
- Additional support has been given by the national ducting fund through a de minimis aid.
- The plans for the use of ESIF (European Structural and Investment Funds) in the financing period (2014-2020) foresee approximately EUR 412 million (excluding national co-financing) to be assigned to NGA deployment projects.

6.8. Country information - Estonia

Estonia has established basic broadband coverage throughout the country, the broadband targets for 2020 are in line with the DAE's.

6.8.1. Summary of broadband development in Estonia

Estonia updated the targets and measures for broadband as part of its new Digital Agenda 2020 in early 2014. The strategy envisages full coverage with connections of at least 30 Mbps by 2020 and aims to promote take-up of ultra-fast subscriptions with at least 100 Mbps with the objective that these account for 60% or more of all internet subscriptions by the same year. Estonia is currently deploying a middle-mile network of fibre-optic cables. After completion, 98% of all residential buildings, companies, and agencies will be located within 1.5 km of at least one fibre network access point.

6.8.2. Main aims for broadband development

- Completion of the fast basic broadband network

- Expansion of the broadband retail network in regions of market failure, by:
- Reducing administrative burden related to the construction of a communication network by simplifying the relevant legal framework.
- Obligatory installation of “last mile” connections in new buildings which are part of state-funded development projects;
- Promoting community initiatives for the development of fast internet connections;
- Supporting the construction of “last mile” connections in areas of market failure, including rural areas, if necessary.
- Analysing the need for external connections and implementing relevant projects when necessary.
- Ensuring the availability of radio frequencies that meet the requirements of information society to provide internet access for end users in areas where fixed networks are not available.
- Promoting the principle of network neutrality, which means that electronic communication operators may not restrict final users’ access to legal communication services, websites or available platforms.
- Promoting secure public WiFi networks, mainly provided by (local) public sector organisations.

The long term NGA aims are 100% coverage with 30 Mbps and 60% households’ penetration with 100 Mbps service by 2020.

6.8.3. Main measures for broadband development

A central mapping tool about deployment of broadband services is developed by the Estonian Broadband Development Foundation (ELASA). It is an interactive portal, where the users can get information about the availability of broadband services in Estonia.

6.9. Country information - Germany

Germany’s broadband strategy sets the goal of providing all households with broadband access of at least 50 Mbps by 2018.

6.9.1. Summary of broadband development in Germany

The broadband and Next Generation Access coverage in Germany is above the European average with DSL being the most common technology to provide broadband access. Germany's strategy was adopted in 2009 by the Federal Ministry of Transport and Digital Infrastructure and revised in 2013 and continues to be in force until 2018 as part of Germany's Digital Agenda 2014-2017 (pdf).

In addition the Federal Ministry for Economic Affairs and Energy (BMWi) published the Digital Strategy 2025 (Digitale Strategie 2025), with more focus on stimulating broadband take up and usage in different sectors.

In November 2016 the Federal Ministry of Transport and Digital Infrastructure and the Network Alliance for a Digital Germany (Netzallianz Digitales Deutschland) have published the Cornerstones of future-oriented Gigabit-Germany (Eckpunkte Zukunftsoffensive Gigabit-Deutschland). The document contains the implementation phases as well as measures for rolling out 5G networks and gigabit-capable converged infrastructures in Germany by 2025. Consequently, the Network Alliance for a Digital Germany adopted the strategy Future-oriented Gigabit-Germany (Zukunftsoffensive Gigabit-Deutschland) in March 2017. The strategy restates the implementation phases and provides a set of detailed measures for the deployment of gigabit networks and the main supporting measures of the federal government. The strategy determines how the federal government will promote and incentivise the expansion of gigabit networks in Germany, including the continuous provision of EUR 3 billion per year as of 2018 for the promotion of broadband infrastructures. The strategy aims at establishing a high-performance (gigabit-ready) broadband network in Germany by 2025.

6.9.2. Main aims for broadband development

The objective of the Digital Agenda 2014-2017 is to provide broadband connections featuring transmission rates of at least 50 Mbps for all households until 2018. The strategy suggests the use of synergies for cost-effective expansion of broadband infrastructure and introduces a supportive frequency policy as well as a market-friendly and growth-orientated regulatory framework. In addition, the financial aid programmes are considered as means for stimulating the expansion of broadband networks, which are primarily carried out by private operators. In doing so, Germany opts for a technology-mix in realising its targets.

Furthermore, the Federal Ministry for Economic Affairs and Energy has launched the Digital Strategy 2025 (Digitale Strategie 2025). The Federal Government's ICT strategy is to seize the opportunities that digitisation presents to strengthen Germany's role as an innovative and highly productive economy.

6.9.3. Main measures for broadband development

- Regulation measures: the revision of the Telecommunications Act, which entered into force in May 2012, supplements the Federal Government's Broadband Strategy and optimizes the framework for the expansion and construction of high-speed networks by creating incentives for investment in new networks. It also addresses the requirements to jointly use alternative infrastructures like sewer or energy networks or apply cost-effective technologies like micro-trenching to increase broadband coverage and reduce deployment costs. The revised Telecommunications Act strengthens competition between service operators by proscribing open access obligation to networks as well as by introducing consumer protection measures in the telecommunications sector.
- Broadband mapping: as a central information point, the broadband atlas shows broadband penetration and availability. A bi-annual report on the broadband atlas contains a detailed analysis of broadband availability at the federal and state levels. Furthermore, the Bundesnetzagentur has launched a nationwide infrastructure atlas to facilitate the use of synergies in infrastructure deployment. The atlas contains spatial data about the infrastructure of companies and institutions, such as geo-data about fibre optic lines, empty ducts, radio towers and masts as well as radio stations.
- Other measures: with the Network Alliance for a Digital Germany" (Netzallianz Digitales Deutschland) the government established a forum for discussion by telecommunications developers and network operators on the conditions for incentivising market investments. It acts both as a forum for new ideas and as a discussion platform. In autumn 2014, the Network Alliance for a Digital Germany presented a roadmap outlining all action areas relevant for digital expansion together with key milestones for network expansion. In 2016 a second roadmap was published by Netzallianz. It comprises of detailed measures to achieve the strategic targets and provides concrete measures in realizing the gigabit-networks in Germany.

6.9.4. National and regional broadband financial instruments

The federal states in Germany support broadband development with a number of measures and financial means. Some of the current measures are:

- Federal funding programme (Förderprogramm zum Breitbandausbau): this program supports network expansion to provide high-speed broadband networks in underserved areas in the next three years with EUR 4 billion. The support of the federal state permits nationwide expansion of minimum 50 Mbps connections in areas that were previously underserved. The maximum amount of federal funding per project is EUR 15 million with a 50% co-financing rate of eligible costs. Combination with other funding programs, e.g. from the federal states, is possible and can be added to cover the remaining co-financing. An overview of ongoing and completed funding processes in different federal states (Bundesländer) can be found at Breitband-Ausschreibungen.

Other financial measures:

- The German government-owned development bank KfW offers the loan 208 IKK to municipalities to support investments in infrastructure including broadband infrastructure. Though the loan is capped at EUR 150 million annually, it can be combined with financial resources from public funding. More information is available on the KfW website.
- The Landwirtschaftliche Rentenbank also offers loans to support projects intending to improve or establishing communication infrastructure including broadband networks in rural areas. The loans cap at EUR 10 million annually.
- Additional funding programmes have been developed on federal state level. For further information, please contact the Breitbandbüro des Bundes or the competence centres of the federal states.

7. Conclusions

In this document, we provided a compilation of various comparisons of sharing economy aspects. Sharing economy is new, still not widely known or recognized but it clearly demonstrates many advantages to both providers of products and services and users. From studies that have been referenced it can be seen how MED region countries do have strong tendency to use sharing economy business models and technology to boost traditional commercial activities into new domains.

However, we have also seen that legislative framework is still trailing technological solutions (that is, unfortunately, the case in other domains as well).

Our analysis also addressed usage analytics, business model aspects, country/region aspects, telecommunication and internet access aspects and other, since those are rarely formally grouped,

In this document, we have consulted many sources of data, comparison charts, surveys, analyses from governments, public bodies as well as industry and research entities. For all information, we used, we provide source references (in brackets[]) and want to acknowledge their valuable work.

A more wider education/dissemination activities on possibilities that SE offers is another key conclusion that could lead to wider use. Our project proposes creation of SE Network that will try to create common place for all that are interested in SE and a vehicle to promote SE in MED region.

8. References

1. ING, "ING International Survey: Sharing Economy 2015", https://www.economics.com/ing_international_surveys/sharing_economy_2015/
2. CNBC, "Airbnb's growth is slowing because it's being hit by regulation, UBS says", <http://www.cnbc.com/2017/04/13/airbnb-growth-slowing-regulation-ubs.html>
3. EC, "The use of collaborative platforms", Flash Eurobarometer 438, EU 2016.
4. EC, "Analytical paper on the economic scale and growth of the collaborative economy", <http://ec.europa.eu/DocsRoom/documents/16952/attachments/1/translations/en/renditions/native>
5. PWC, "How the sharing economy is reshaping business across Europe", <http://www.pwc.co.uk/issues/megatrends/collisions/sharingeconomy/future-of-the-sharing-economy-in-europe-2016.html>
6. EC, "Digital Single Market: Broadband in Member States", <https://ec.europa.eu/digital-single-market/en/broadband-member-states>
7. EC, "Analytical paper on market access requirements in the short-term accommodation rental sector in Barcelona, Berlin and Amsterdam", <http://ec.europa.eu/DocsRoom/documents/16948/attachments/1/translations>
8. EC, "Analytical paper on market access requirements in the short-term accommodation rental sector in Paris, Rome, Milan and London", <http://ec.europa.eu/DocsRoom/documents/16949/attachments/1/translations>
9. Eurostat, "Digital economy and society statistics - households and individuals", http://ec.europa.eu/eurostat/statistics-explained/index.php/Digital_economy_and_society_statistics_-_households_and_individuals
10. EC, "A European agenda for the collaborative economy", <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2016:356:FIN>
11. Eurostat, "Information society statistics at regional level", http://ec.europa.eu/eurostat/statistics-explained/index.php/Information_society_statistics_at_regional_level

9. Appendix A: Collaborative economy companies founded in Europe [4]

In the table below, we provide list of SE companies [4] throughout Europe. This list is by no means complete and should be updated on regular time basis.

Sector	Company Name	Country of Origin
Car sharing networks	Degage	Belgium
Car sharing networks	Eutodelen	Belgium
Car sharing networks	Zen	Belgium
Crowdsourced delivery networks	TakeEatEasy	Belgium
Lending Platforms	LookandFin	Belgium
On-demand household chores	Listminut'	Belgium
On-demand household chores	MenuNextdoor	Belgium
Other transportation asset sharing	BePark	Belgium
Car sharing networks	Drivy	France
Car sharing networks	Ouicar	France
Car sharing networks	Koolicar	France
Car sharing networks	TravelerCar	France
Car sharing networks	Autolib	France
Crowdfunding	Wecan.fund	France
Crowdfunding	Kisskissbankbank	France
Crowdfunding	Afexios	France
Crowdfunding	Bulbintown	France
Crowdfunding	Crowd2Win	France
Crowdfunding	Easiup	France
Crowdfunding	Enerfip	France
Crowdfunding	Mynewstartup	France
Crowdfunding	Ulule	France
Crowdfunding	Lacourteechelle	France
Crowdsourced delivery networks	TokTokTok	France
Crowdsourced delivery networks	Stuart	France
Crowdsourced delivery networks	Resto-in	France
Crowdsourced delivery networks	ColisWeb	France
Crowdsourced delivery networks	Deliveree	France
Crowdsourced delivery networks	Get	France

Crowdsourced delivery networks	Shiply	France
Freelancer marketplaces	HopWork	France
Lending Platforms	Lendix	France
Lending Platforms	Unilend	France
Lending Platforms	Finsquare	France
Lending Platforms	Tributile	France
Platforms	Pret-Dunion	France
Lending Platforms	Prexem	France
Long-distance ride sharing	Blablacar	France
On-demand household chores	Ilokyou	France
On-demand household chores	Stootie	France
On-demand household chores	Cleanio	France
On-demand household chores	Mib Clean	France
On-demand household chores	Vizeat	France
On-demand household chores	Frizbiz	France
On-demand household chores	Helpy	France
On-demand household chores	Foodchéri	France
On-demand household chores	Dweho	France
Other transportation asset sharing	Mobypark	France
Other transportation asset sharing	MonsieurParking	France
Other transportation asset sharing	SharedParking	France
Other transportation asset sharing	Qpark-resa	France
Other transportation asset sharing	Pmobile (developed	France
Ride sharing services	LeCab	France
Ride sharing services	Chauffeur-Privé	France
Ride sharing services	SnapCar	France
Specialised professional service platforms	Willid	France
Specialised professional service platforms	eYeka	France
Specialised professional service platforms	Creads	France
“Peer-to-peer” rental platforms	Wimdu	Germany
“Peer-to-peer” rental platforms	9Flats	Germany
Car sharing networks	Car2Go	Germany
Car sharing networks	DriveNow	Germany
Car sharing networks	Tamyca	Germany
Car sharing networks	Autonetzer (now	Germany
Car sharing networks	Hertz 24/7	Germany
Crowdfunding	Fairplaid	Germany
Crowdfunding	Companisto	Germany
Crowdfunding	Innovestment Gmbh	Germany
Crowdfunding	Aescuvest	Germany
Crowdfunding	Bettervest	Germany

Crowdfunding	Conda	Germany
Crowdfunding	Deutsche	Germany
Crowdfunding	Funderation	Germany
Crowdfunding	GreenXMoney	Germany
Crowdfunding	Seedmatch	Germany
Crowdfunding	Leihdeinerstadtgeld	Germany
Crowdsourced delivery networks	Foodora	Germany
Platforms	FundingCircle	CE Germany
Lending Platforms	Auxmoney	Germany
Lending Platforms	Lendico	Germany
Lending Platforms	Giromatch	Germany
On-demand household chores	Doido	Germany
On-demand household chores	Mila	Germany
On-demand household chores	Helpling	Germany
On-demand household chores	BookaTiger	Germany
Other transportation asset sharing	ParkPocket	Germany
Other transportation asset sharing	ParkTag	Germany
Specialised professional service platforms	Twago	Germany
Car sharing networks	Enjoy	Italy
Crowdfunding	Assitecacrowd	Italy
Crowdfunding	Ecomill	Italy
Crowdfunding	DeRev	Italy
Freelancer marketplaces	CoContest	Italy
Lending Platforms	Smartika (Zopa Italy)	Italy
Lending Platforms	Prestiamoci	Italy
On-demand household chores	SupperShare	Italy
Car sharing networks	Snappcar	Netherlan
Car sharing networks	WeGo	Netherlan
Car sharing networks	MyWheels	Netherlan
Car sharing networks	Deelauto	Netherlan
Car sharing networks	Greenwheels	Netherlan
Crowdfunding	4Just1	Netherlan
Crowdfunding	Geeferom	Netherlan
Crowdfunding	Gambitious	Netherlan
Crowdfunding	TenPages.com	Netherlan
Crowdfunding	Symbid (The Funding	Netherlan
Crowdfunding	Doorgan	Netherlan
Crowdfunding	Greencrowd	Netherlan
Crowdfunding	Wesharesolar	Netherlan
Crowdfunding	Zorgfunders	Netherlan
Crowdfunding	Crowdfunding	Netherlan

Crowdfunding	Oneplanetcrowd	Netherlan
Crowdsourced delivery networks	Pickthisup	Netherlan
Freelancer marketplaces	Viedit	Netherlan
Lending Platforms	Geldvoorelkaar	Netherlan
Lending Platforms	Lendahand	Netherlan
Lending Platforms	Collin Crowdfund	Netherlan
Lending Platforms	KapitalOopmat	Netherlan
Lending Platforms	SamenIngeld	Netherlan
Lending Platforms	Samenwekende	Netherlan
On-demand household chores	Jobado	Netherlan
On-demand household chores	ShareYourMeal	Netherlan
On-demand household chores	Merkatus	Netherlan
On-demand household chores	Mrfix	Netherlan
On-demand household chores	Klusup	Netherlan
Ride sharing services	togethr	Netherlan
On-demand household chores	Peerby	Netherlan
Crowdfunding	Wspieram	Poland
Crowdfunding	Crowdfunding.pl	Poland
Crowdfunding	eventudu	Poland
Crowdfunding	Wspolnyprojekt	Poland
Crowdfunding	Polakpotrafi	Poland
Crowdsourced delivery networks	Jadezabiore	Poland
Lending Platforms	Wspolnicy	Poland
Lending Platforms	GiveTake	Poland
Lending Platforms	Finansowo	Poland
Lending Platforms	Kokos	Poland
On-demand household chores	Pobli	Poland
On-demand household chores	Sirlocal	Poland
"Peer-to-peer" rental platforms	Alterkeys	Spain
Car sharing networks	SocialCar	Spain
Car sharing networks	Avancar	Spain
Crowdfunding	RealFunding	Spain
Crowdfunding	Creoentuproyecto	Spain
Crowdfunding	MocroInversores	Spain
Crowdfunding	MyNbest	Spain
Crowdfunding	Crowdfunding safari	Spain
Crowdfunding	Igamudi	Spain
Crowdfunding	SocioInversores	Spain
Crowdfunding	WorldCoo	Spain
Crowdfunding	Verkami	Spain
Crowdsourced delivery networks	Glovo	Spain

Crowdsourced delivery networks	Shipeer	Spain
Freelancer marketplaces	Nubelo	Spain
Lending Platforms	Arboritus	Spain
Lending Platforms	Growly	Spain
Lending Platforms	Loanbook Capital	Spain
Lending Platforms	Finanzarel	Spain
Lending Platforms	Communitae	Spain
On-demand household chores	ETECE	Spain
On-demand household chores	HogarSoluciones	Spain
On-demand household chores	FamilicaFacil	Spain
On-demand household chores	Tumanitas	Spain
On-demand household chores	Wayook	Spain
Other transportation asset sharing	LetMeSpace	Spain
Other transportation asset sharing	Aparcandgo	Spain
Specialised professional service platforms	Geniuzz	Spain
Vacation rental platforms	Niumba	Spain
Car sharing networks	Flexidrive(acq.by	Sweden
Car sharing networks	Sunfleet	Sweden
Crowdfunding	FundedByMe	Sweden
Crowdfunding	CrowdCulture	Sweden
Crowdsourced delivery networks	Urb-it	Sweden
Lending Platforms	Toborrow AB	Sweden
Lending Platforms	Lendify AB	Sweden
Long-distance ride sharing	BilPlats.se	Sweden
Long-distance ride sharing	Skjutsgruppen	Sweden
Long-distance ride sharing	Mobilsamakning	Sweden
On-demand household chores	Butlr	Sweden
On-demand household chores	Domytask	Sweden
On-demand household chores	HIHD AB	Sweden
On-demand household chores	Taskrunner	Sweden
Specialised professional service platforms	E-Work	Sweden
Vacation rental platforms	Fritiden	Sweden
Car sharing networks	EasyCarClub	UK
Car sharing networks	Rentecarlo	UK
Crowdfunding	Investingzone	UK
Crowdfunding	CrowdPatch	UK
Crowdfunding	Syndicateroom	UK
Crowdfunding	Angels Den	UK
Crowdfunding	Emerging Crowd	UK
Crowdfunding	Trillion Fund	UK
Crowdfunding	Seedrs	UK

Crowdfunding	Seedups	UK
Crowdfunding	Emerging Crowd	UK
Crowdfunding	CrowdCube	UK
Crowdfunding	Unbound	UK
Crowdfunding	Abundance	UK
Crowdfunding	Bloom	UK
Crowdfunding	BNKTOTHEFUTURE	UK
Crowdfunding	Crowdforangels	UK
Crowdfunding	Crowdfunder	UK
Crowdfunding	Gamcrowd	UK
Crowdfunding	FundingEmpire	UK
Crowdfunding	Microgenius	UK
Crowdfunding	Mayfair&Morgan	UK
Crowdfunding	Venturefounders	UK
Crowdfunding	Money&co	UK
Crowdsourced delivery networks	Nimber	UK
Crowdsourced delivery networks	Shutl	UK
Crowdsourced delivery networks	StreetTeam	UK
Crowdsourced delivery networks	Swishd	UK
Crowdsourced delivery networks	Pedals	UK
Crowdsourced delivery networks	Jinn	UK
Crowdsourced delivery networks	Quiquip	UK
Crowdsourced delivery networks	Henchmanapp	UK
Crowdsourced delivery networks	Deliveroo	UK
Crowdsourced delivery networks	DineIn	UK
Crowdsourced delivery networks	CityPantry	UK
Crowdsourced delivery networks	ValkFleet	UK
Crowdsourced delivery networks	DeliveryCube	UK
Crowdsourced delivery networks	Hubbub	UK
Crowdsourced delivery networks	Beelivery	UK
Crowdsourced delivery networks	Meals	UK
Freelancer marketplaces	Peopleperhour	UK
Freelancer marketplaces	FiveSquid	UK
Freelancer marketplaces	Babelverse	UK
Freelancer marketplaces	Voices	UK
Home-swapping platforms	LoveHomeSwap	UK
Lending Platforms	FundingCircle	UK
Lending Platforms	Thincats	UK
Lending Platforms	Folk2Folk	UK
Lending Platforms	AssetzCapital	UK
Lending Platforms	FundingKnight	UK

Lending Platforms	Rebuilding Society	UK
Lending Platforms	Ablrate	UK
Lending Platforms	Proplend	UK
Lending Platforms	Saving Stream	UK
Lending Platforms	Archover	UK
Lending Platforms	Fireflock	UK
Lending Platforms	lendingcrowd	UK
Lending Platforms	Realfunds	UK
Lending Platforms	Zopa	UK
Lending Platforms	RateSetter	UK
Lending Platforms	Lending Works	UK
Lending Platforms	Unbolted	UK
Lending Platforms	Wellesley & Co.	UK
Lending Platforms	Landbay	UK
Lending Platforms	Lendinvest	UK
Lending Platforms	Cofunder	UK
Long-distance ride sharing	Liftshare	UK
Long-distance ride sharing	GoCarshare	UK
On-demand household chores	TaskPandas	UK
On-demand household chores	Echo	UK
On-demand household chores	Favourful	UK
On-demand household chores	Care.com	UK
On-demand household chores	ZipJet	UK
On-demand household chores	Washbox(now	UK
On-demand household chores	Laundrapp	UK
On-demand household chores	Spyn	UK
On-demand household chores	Tusted housitters	UK
On-demand household chores	Hassle	UK
On-demand household chores	Urban Massage	UK
On-demand household chores	Housekeep	UK
On-demand household chores	Wahanda	UK
On-demand household chores	Bizzby	UK
On-demand household chores	IHateIroning	UK
On-demand household chores	LaundryRepublic	UK
Other transportation asset sharing	JustPark	UK
Other transportation asset sharing	Parkonmy drive	UK
Ride sharing services	Haxi	UK
Vacation rental platforms	OneFineStay	UK