Vodafone Group Response: European Strategy for Data

Executive Summary

Vodafone's response to the EU Data Strategy consultation sits within the wider plan we have established for supporting Europe through the Coronavirus crisis. In addition to our five point plan to response to the immediate health crisis, Vodafone has developed a long term package of measures to assist with the recovery from the protracted economic crisis we are entering into.

Data is a vital part of this strategy and Vodafone wholeheartedly supports the objective of the European Commission to encourage data sharing and reuse and thereby unlock the latent value of data. We consider that enhanced sharing and reuse of data is a necessary precondition for establishing a resilient European digital society.

Vodafone's objectives for creating a resilient European digital society prioritise a number of key areas:

- Expand and future-proof our network infrastructure through 5G deployment and next-generation fixed line technologies.
- Further support Governments, as they seek to integrate eHealth and eEducation solutions, into their "new normal" public service frameworks.
- Ensure those most vulnerable get the digital access they need and support in digital literacy.
- Promote the widespread adoption of digital technologies for all businesses, with a particular emphasis on SMEs.
- Support Government exit strategies through targeted deployment of digital technology.

These would be transformational steps with long-lasting positive effects for societies. This agenda complements our continued delivery on Vodafone's purpose targets, including halving our carbon emissions and sourcing 100% renewable electricity by 2025, as well as helping our customers to reduce their environmental impact through our products and services (not least IoT, such smart logistics and fleet management, and smart metering). For example, last year in Europe, we helped our customers save five times the emissions generated from our own operations.

As a result, we believe these actions align fully with the Commission President's vision of building a resilient, green and digital Europe. However, we will not be able to do this alone. In order to achieve our objectives and the actions set out above, Governments will need to make a step change in their support for the vulnerable and small businesses including in terms of digitisation.

Throughout the first phase of our response, mobile network data has been used to provide governments and health authorities with valuable aggregated insights to assess how well containment is working, reducing the spread of the virus. Vodafone is in a unique position to provide these insights, given its pan European footprint.

Governments, such those in Italy, Spain and Greece, have used these analyses to understand if the lockdown decisions they have taken are having the impact they wished for in containing the spread of the virus. Some have also applied population movement data to their epidemiological models, to improve the accuracy of their predictions of the spread of the virus, inputting our mobility insights as predictors of impact of lockdowns on social distancing.

As the rate of Covid-19 infections starts to decline in some European countries but the economic impact of the lockdowns increases, governments are starting to relax lockdown regulations, in order to improve citizens' quality of life and re-start parts of their economies. Their options include varying lockdown restrictions by region, citizens' ages, or over time. In all cases, Location Intelligence can help governments monitor compliance with revised lockdown regulations. For example, they can monitor:

- Whether relaxation of regulations in less-infected cities or regions leads to lower compliance in cities or regions where lockdowns remain strict;

- Whether there is significant movement of people between less-infected and more-infected cities and regions.

Since citizens' movements are a leading indicator of future Covid-19 spread, we believe our location insights can help governments walk the fine line between 'flattening the curve' and improving citizens' quality of life and releasing economic activity. If the overall population mobility rises faster than expected — or not at all — when lockdown regulations are changed, governments can react overnight, rather than weeks later, when infections rise or the economy does not.

Building on this experience, our response to the EU Data Strategy sets out in detail Vodafone's views on how to incentivise and enable sharing and reuse of data in Europe. We highlight current obstacles to data sharing and reuse and suggest actions for policy makers to alleviate these, facilitating enhanced data sharing between organisations, across industry verticals and between the government and commercial sectors. We also offer our views on the question of European data infrastructure, and outline our support for co-regulatory measures to inject greater competition and increased supplier diversity in the European cloud market.

A number of guiding principles are evident throughout our response. Sharing and reuse of data should:

i. Be encouraged through voluntary, market driven mechanisms and not imposed through mandatory, top down requirements (except in very limited circumstances, for example where a firm is deemed to have significant or strategic market power);

ii. Only take place where it is legally compliant, ethical and socially acceptable in line with the principles of trustworthiness and privacy-by-design;

iii. Be subject to fair remuneration, recognising the significant upfront investment required to produce meaningful and accurate insights from large volumes of data, creating the conditions for a sustainable European market for data driven products and services.

Voluntary measures to stimulate data sharing and reuse

Sharing and reuse of data should be incentivised through voluntary industry initiatives (codes of conduct) and technical measures that facilitate the porting of data from one provider to another (data interoperability) such as APIs and open data access models. In this sense, standardisation in support of interoperability and data usage agreements should be promoted. Interoperability ensures that data can 'talk' to one another when transferred between providers. Vodafone considers that interoperability has been a vital tool in the communications sector to reduce switching costs for users, and thereby incentivize competition. Similarly, interoperability can promote increased sharing and reuse of data between service providers and actors in different sectors.

Trustworthy data sharing that is Privacy-by-design

The benefits of increased data sharing must always be carefully weighed against of the privacy risks associated with increased collection and processing of personal data. Vodafone supports the basic principle of putting users in control of their own data. For this reason we have taken steps to ensure it is easy for users to either erase or port their data to a third party as required under the terms of GDPR.

Our industry has a strong reputation for respecting the confidentiality and security of our communications and our customer's data. Unlike platform businesses, we do not primarily rely on inferred insights derived from combining user data from multiple sources to create value, and our business does not subsist from placing or optimising advertising based on such insights.

Vodafone supports the application of privacy by design and ethics by design, to ensure that data sharing takes place in a manner that respects the rights and protections afforded to individuals in relation to their personal data and confidentiality of communications.

Fair remuneration to ensure a sustainable European market for data driven services

Vodafone believes that unlocking the potential economic and societal benefits of data requires an agreed set of principles to encourage sharing and reuse. A key principle must be to recognise that collecting, processing, storing and transmitting data is not costless. Operators investing in tools and technology to collect and analyse data should be able to develop a commercial model for the reuse and aggregation of this data and be entitled to receive a fair return. Yet it is only through sharing that the full potential of B2B data will be achieved, as both generators of data and new entrants develop innovative products and solutions.

These principles can be supported by policy measures designed to promote access to commercially held data on Fair, Reasonable and Non-Discriminatory terms (FRND) whilst recognising that the approach will differ according to the type of data in question: whether private, public, personal, non-personal or subject to other legal considerations. Further considerations include that any sharing of non-personal data must be legally valid, socially acceptable and economically viable (including market considerations). Therefore this is not a mandate to share, rather an emphasis on policy measures to help unlock the benefits and associated value of B2B data sharing.

Section 1: General questions on the data strategy

> Do you agree that the European Union needs an overarching data strategy to enable the digital transformation of the society?

Yes. Vodafone wholeheartedly supports the objective of the European Commission to encourage data sharing and reuse and thereby unlock the latent value of data. Vodafone is keen to engage at an early stage to ensure that the EU data strategy enables businesses to maximise the value of the data they hold, breaks down barriers to data sharing between organisations and enshrines ethical and human-centric use of data.

This work should build on the positive steps taken under the Digital Single Market strategy, for example through the creation common European data space in the field of personal data (with the introduction of GDPR), introduction of rules banning unjustified data localisation mandates (Free Flow of Data Regulation) and new measures to mandate reuse of public sector data (Open Data Directive). The focus of policy makers has now shifted to measures (voluntary and legislative options both being considered) to incentivise and in some circumstances mandate that companies open up access to data they hold.

Crucially, and in contrast to efforts in the US and China to boost innovation through enhanced use of data, a European data economy should adhere to European values, upholding citizen's fundamental rights to data protection and privacy.

> "More data should be available for the common good, for example for improving mobility, delivering personalised medicine, reducing energy consumption and making our society greener." To what extent do you agree with this statement?

To some extent. We would advise caution in the way in which terms like 'common good' and 'public interest' are deployed in the context of data sharing. We strongly support the view that data, for example on mobility patterns, can be an extremely useful asset for governments and public administrations upon which to base policy and spending decisions, creating better outcomes both societal and economic. This has been most evident through our response to the Coronavirus crisis, where we have supported governments with

improved insights on the movements of people in affected areas. Indeed, Vodafone has long believed that network-based location data would help planning organisations in Europe's local and regional administrations to enhance town and city centres, and ensure better traffic flows. To this end, we have applied analytics and AI to turn our aggregate and anonymised data sets into a Location Intelligence service.

These issues have been addressed comprehensively by the B2G data sharing expert group, who reported to the Commission earlier in the year. We would wholeheartedly agree with their conclusion that: "Requiring access to certain datasets in specific situations **does not necessarily imply that the data should be shared free of charge**. Companies incur costs to make data available, including time and resources for preparing the data, adapting it to the specific request and building the infrastructure necessary for the transmission of such data (e.g. APIs). For B2G data sharing to become sustainable, these initiatives should be mutually beneficial."

So while Vodafone is strongly in favour of increased sharing of reuse of data, both across the private sector and between business and public administrations, we think it is best to consider ways in which data can generate insights which will lead to improve outcomes from an economic and societal perspective. In so doing we do not conceive of data as a public asset, or something which should be held in the public interest or common good, as to do so fails to recognise the sustained and significant investment that is required over the long term to develop, maintain and refine big data analytics techniques. Therefore: even where increased sharing and reuse of privately held data can create outcomes that are societally beneficial, we believe this must be backed up by a sustainable business model, with direct or indirect remuneration provided to those firms who have invested.

In very exceptional circumstances, mandatory access to data could be justified, for example where there is a national emergency or immediate threat to life. In such circumstances access to data should be limited to the minimum necessary to address health/emergency needs and should be deleted when no longer needed. Costs should be covered and access should be restricted where possible to insights, rather than raw data. Any mandatory requirements should not undermine the incentives to invest in data analytics capacity, and should not lose sight of the importance of stimulating demand for such data. For example, governments must be equipped with the skills and capabilities to meaningfully analyse data driven insights and use these to inform policy making and spending decisions. This can be done by ensuring the requisite data skills and access to digital tools and platforms exist across government, at both the central (state) and local (city/regional) level.

We would also like to flag that in some cases, sharing data with government and public authorities has been hampered by technical and operational complications beyond our control. For example, where we have been request to share insights generated from mobile network data, in some cases these requests have been for data categories or formats that we do not collect for regulatory or commercial reasons. We have also experienced problems in creating secure data transfer mechanisms with governments in order to receive data we are willing to provide and delays in putting in place the appropriate legal mechanisms and agreements to cover such data transfer. To ensure data can flow more easily from commercial to public organisations, guidance from the Commission on addressing these technical and operational barriers would be extremely helpful.

Do you think that it should be made easier for individuals to give access to existing data held about them, e.g. by online platform providers, car manufacturers, producers of wearables, voice assistants or smart home appliances, to new services providers of their choosing, in line with the GDPR?

In theory yes, although this should be carefully weighed against of the privacy risks associated with increased collection and processing of personal data. Vodafone supports the basic principle of putting users in control of their own data. For this reason we have taken steps to ensure it is easy for users to either erase or port their data to a third party as required under the terms of GDPR.

Our industry has a strong reputation for respecting the confidentiality and security of our communications and our customer's data. Unlike platform businesses, we do not primarily rely on inferred insights derived from combining user data from multiple sources to create value, and our business does not subsist from placing or optimising advertising based on such insights.

There exists an underlying tension between the principle of increased data sharing on the one hand, and increased user-control over data on the other. While safeguards and governance procedures can be put in place (obligations around specific consent for individual purposes and onward sharing of data under GPDR for example) each time data is shared with a third party it becomes more complex for the data subject to assert control over such data, and to request its deletion. Furthermore, a sharing framework between companies would require rigorous enforcement to ensure that platform companies' commercial interest in collecting data from new sources for optimising advertising does not result in harm to individuals (e.g. user consent to sharing health data collected through wearable devices being contingent on the provision of an unrelated service).

In addition, we would encourage the Commission to place greater emphasis on unleashing the latent value of data in industrial settings. Vodafone commissioned Deloitte to model the economic benefits of B2B data sharing in a number of industry sectors, finding that the sharing of machine-generated non-personal data would add €1.4 tn in economic value to the EU economy by the year 2027. [1]

Realising this value depends, in large part, on the successful sharing of B2B data between organisations. Sharing is vital, as there may be a wide range of potential uses for the data once it has been transmitted from the connected device and many of those uses may not take place within the organisation that holds the data or may require different skills. Data can be shared with customers and suppliers throughout the supply chain (vertical data sharing); with peers to create larger data sets including more variation (horizontal data sharing); and outside the sector with stakeholders who can make use of the data in new settings (external data sharing).

The increase in economic value accrues largely to the manufacturing sector due to its relative size as well as the growing trend toward automation and data exchange (known as Industry 4.0). The data used in the manufacturing area is primarily machine to machine, which limits the inhibiting effect of managing the issues of personal data. Advances in software analytics, including Artificial Intelligence, support an increase in automated solutions and outcomes, leading to greater efficiencies in operations and maintenance.

Which mechanism(s) do you think would help achieve this?

Vodafone believes that unlocking the potential economic and societal benefits of data requires an agreed set of principles to encourage sharing and reuse. A key principle must be to recognise that collecting, processing, storing and transmitting data is not costless. Operators investing in tools and technology to collect and analyse data should be able to develop a commercial model for the reuse and aggregation of this data and be entitled to receive a fair return. Yet it is only through sharing that the full potential of B2B data will be achieved, as both generators of data and new entrants develop innovative products and solutions.

In general, we support the principle of inter-operability in that data should be made available in a machine-readable format with the use of standardisation techniques and APIs to facilitate the porting of data amongst service providers where the above mentioned considerations are met (legally valid, socially acceptable and economically viable).The standards to assist with data access and reuse should be developed by industry, and undertaken on a voluntary basis, rather than being imposed. Access and reuse of data must also be in accordance with company's data governance policies, and come with clear

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[1] https://www.vodafone.com/content/dam/vodcom/files/public-policy/Realising_the_potential_of_IoT_data_report_for_Vodafone.pdf

safeguards to protect the integrity of data and availability of services. Opportunities for sharing for insights based on data rather than the raw data itself also hold value and should be part of the discussion.

> Have you faced difficulties in recruiting data professionals (workers who collect, store, manage, analyse, interpret and visualise data as their primary or as a relevant part of their activity) during the last 2 years?

Yes, Vodafone has experienced difficulty in recruiting data professionals with the necessary skills and experience. In general this is a hotly contested labour market, with an insufficient supply of employees to fill all the available roles.

> Have you had difficulties in using data from other companies? What is the nature of these difficulties?

Technical

As B2B data sharing is a growing, but still nascent, opportunity, organisations will typically have developed their data management systems for their internal use only. Thus, data often rests in silos, either organisational or sectoral. The real value of data is when it can be combined with other data sets to spot patterns and generate insights (particularly with the advent of advanced machine learning techniques and growth in data storage and processing capacity). The friction caused by an inability to port data amongst service providers is a significant impediment to realising the economic and societal benefits anticipated from a greater use of B2B data. Using industry agreed APIs should ameliorate these concerns.

Legal and Regulatory

These relate to situations where business are disincentivised to share data, due to concerns about breaching laws (e.g. privacy laws, competition law). This arises in part because of the need to comply with the General Data Protection Regulation (GDPR) and the ePrivacy Directive as transposed into national Member State laws. Big data analysis requires the use of pseudonymous data for effective modelling; companies therefore must comply with all GDPR requirements to share data necessary for big data analysis making them reluctant to share data even where there is no practical risk of re-identifying an individual from a data set. Furthermore, the narrow permitted purposes for processing traffic data based on specific use cases and exemptions, whether such data relates to individuals or companies, severely restricts it from being used, even where there is no privacy risk. Understandably, companies want to refrain from the direct loss (which when claims, fines and other direct losses are combined may result in loss of a company's entire profit margin for a year) and reputational loss (which in its most tangible form may result in share price drops of up to 20% and loss of 4-5% of a company's customer base) associated with data breaches. This makes companies with tighter profit margins particularly reluctant to share data, as a data breach may be an existential threat. Key ways of addressing these issues are by updating guidance on anonymisation to take account of the latest advances in the technology, permitting secondary uses of traffic data where certain privacy conditions (data minimisation and purpose limitation anonymisation, and technical and procedural access controls) are fulfilled and agreeing a standard, privacy-compliant definition of B2B data sharing.

Commercial/Contractual

Organisations can be reluctant to share B2B data because of an absence of clear business incentives/market mechanisms for trading and reuse of B2B data along with the abovementioned historical data silos. Organisations may be also concerned that they will breach contractual provisions by sharing data with third parties. This can result in a lack of data sharing between organisations that would otherwise be commercially viable or in the public good. Such practices are more common in highly regulated sectors, who tend to be more risk adverse for fear of sanction or reputational damage. Using industry agreed APIs and anonymisation standards should ameliorate these concerns.

To some extent. Sharing of data must also be carefully balanced with Intellectual Property Rights (IPR) and the prerogative of private actors to assert such rights over databases in which they have invested time and resource. While we consider that in general sharing of data has a pro-competitive effect, we must also bear in mind the limitations placed on sharing of certain databases by IPR, and the underlying intention of such rights to promote investment and innovation.

> The EU should make major investments in technologies and infrastructures that enhance data access and use, while giving individuals as well as public and private organisations full control over the data they generate.' To what extent do you agree with this statement?

Agreed. Investments in data infrastructure is an important supply side intervention to help stimulate the data economy, but will be ineffective without similar demand side interventions, to increase data literacy and trust. Individuals and companies must also feel empowered and technical proficient to engage in data mobility through investment in education and awareness.

> 'The development of common European data spaces should be supported by the EU in strategic industry sectors and domains of public interest (industry/manufacturing, Green Deal, mobility, health, finance, energy, agriculture, public administration, skills).' To what extent do you agree with this statement?

Strongly agreed. In particular, Vodafone would support targeted intervention from the Commission to support those industrial sectors hardest hit by the Coronavirus pandemic and subsequent economic crisis. We also welcome renewed commitment from the Commission to link the Data Strategy with the Green Deal, and to ensure that both digitisation and environmental policy lie at the heart of the Commission's roadmap for rebuilding European economies. An example of where this has already been done successfully is the opening up of data by Governmetns to support industries, as set out in the new Common Agricultural Proposals[2].

> Are there general comments you would like to make about the data strategy?

Europe urgently needs to leverage its strengths in manufacturing, transport, health, energy and finance more effectively in order to thrive in the next wave of digital transformation. It is imperative that the value of data can be realised to contribute to our societies, for example, via smart cities, optimised healthcare, greater efficiency of business and a greener environment. In order to do this, Europe needs to lead the next wave of the digital revolution, in AI, 5G and IoT, all powered by big data. Europe cannot afford to be left behind.

As we look to realise the benefits of the data economy, Vodafone supports moving from an 'innovation by permission' to an 'innovation first' approach. Huge amounts of data could be generated throughout the internet value chain, with Internet of Things (IoT) technology helping to unlock this value. It is imperative that the value of the data can be realised (in conjunction with AI techniques) to contribute to our societies, for example, via smart cities, optimised healthcare, greater efficiency of business and a greener environment.

It is not just technology innovation that is relevant here. Regulatory innovation is also required to realise this potential and therefore Vodafone, in conjunction with a number of vertical industry sectors, have recently called for the introduction of a new IoT framework for Europe (in the form of a Recommendation) that has an FRND data sharing principle at its core2. Such a policy measure can facilitate and incentivise a horizontal approach to voluntary non-personal data sharing, leveraging sector specific best practices such

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[2] https://ec.europa.eu/info/news/new-tool-increase-sustainable-use-nutrients-across-eu-2019-feb-19_en

as the extended vehicle and neutral server concepts that are being developed in the automotive sector or the data sharing Code of Conduct that has been pioneered in the agricultural sector.

We also want to make sure that European data strategy is not at odds with free flow of data worldwide. We observe with concern that there is a trend of increasing data localisation measures across the world. It is surprising that the more the data economy grows, the more interdependent our economies become, the more data localisation measures appear to be put in place. As OECD (2018) has observed, strict data localisation requirements affect firms' ability to adopt the most efficient technologies, influencing investments and eventually increasing the cost of innovation and lead to missed business opportunities.

We welcome and encourage WTO e-commerce talks and EU diplomacy in creating trusted global data transfer mechanisms. The world should do a better use of its data; the current Corona pandemic demonstrates how interconnected we are

Section 2.1 - Specific questions on future actions: Data governance

'Data governance mechanisms are needed to capture the enormous potential of data in particular for cross-sector data use.' To what extent do you agree with this statement?

Strongly agreed. Data governance mechanisms provide a means to overcome technical and procedural variations between companies in terms of how they collect, store, and process and delete data. The extent to which these governance mechanisms can be harmonised across sectors and throughout the single market will be beneficial in enabling increased data sharing and reuse.

Sharing and reuse of data should be incentivised through voluntary industry initiatives (codes of conduct) and technical measures that facilitate the porting of data amongst providers to including: **Common APIs and data sharing processes**, to enable interoperability and reduce costs to enter the sharing economy

For example the Deloitte study on machine generated non personal data envisaged the **creation of a data sharing accreditation scheme** to boost trust in the sharing of machine generated, non-personal data. Such accreditation would provide a mechanism for monitoring on the processes used by the recipient (and to some extent the sharer) consistent with the above principles, e.g. that the accredited organisation meets existing ISO standards for IT security (e.g. the relatively new 27017 for cloud IT security).

Practical anonymisation standards that facilitate the deployment of new technologies and companies' responsible use of data, for example attribute suppression, record suppression, character masking, data perturbation, data aggregation and use of synthetic data. Such standards should include clear boundaries to reduce the perceived risk of sharing and contention with GDPR, particularly in relation to pseudonymised data.

An agreed data access model, with governance controls common to all participants, to include configurable permissions management that helps warrant the provenance of the data, ensures the longevity of the data feed to avoid stranding application services upstream and the rights of the seller and buyer of the data.

An agreed approach and potential funding or other incentives to address **B2B data held in legacy system silos** to accelerate the standardisation process and rapidly make large data sets available to the wider ecosystem.

B2B Data suppliers should be incentivised by policy measures which encourage them to develop appropriate data collecting and sharing mechanisms, taking into account market considerations. One such policy measure in relation to IoT has already been identified by Vodafone, in conjunction with a number of vertical industry sectors, who have recently called for the introduction of a new IoT framework for Europe

(in the form of a Recommendation) that includes a 'reasonably endeavours' obligation to share on an FRND basis non-personal machine generated data4. Such a policy measure can facilitate and incentivise a horizontal approach to voluntary non-personal data sharing, leveraging sector specific best practices such as the extended vehicle and neutral server concepts that are being developed in the automotive sector or the data sharing Code of Conduct that has been pioneered in the agricultural sector.

> 'The re-use of data in the economy and society would benefit greatly from standardisation to improve interoperability.' To what extent do you agree with this statement?

Strongly agreed. We support the basic principle that data should be made available in machine-readable format and the use of standardisation techniques and APIs to facilitate the porting and interoperability of data between service providers. However, standards to assist with data access and reuse should be developed by industry, and undertaken on a voluntary basis, rather than being imposed. Access and reuse of data must also be in accordance with company's data governance policies, and come with clear safeguards to protect the integrity of data and availability of services.

> 'Future standardisation activities need to better address the use of data across sectors of the economy or domains of society.' To what extent do you agree with this statement?

Agreed.

> What role should EU or national government bodies take in standardisation?

No strong views.

> 'Public authorities should do more to make available a broader range of sensitive data for R&I purposes for the public interest, in full respect of data protection rights.' To what extent do you agree with this statement?

Agreed.

> Do you think that law and technology should enable citizens to make available their data for the public interest, without any direct reward?

To some extent. Neither law nor the principles behind technology design should make access to certain benefits (public or private services) contingent on the sharing of personal data. Rather we would support the application of privacy by design and ethics by design, to ensure that data sharing takes place in a manner that respects the rights and protections afforded to individuals in relation to their personal data and confidentiality of communications. Where citizens voluntarily decide to share data, without any expectation of reward or payment in kind, we believe that both the law and technology should enable to do so as seamlessly as possible.

> For which of the following purposes would you be willing to make data available?

 Not targeted at businesses

> Do you think there are sufficient tools and mechanisms to "donate" your data?

Not targeted at businesses.

> What would support the usefulness of 'data altruism' mechanisms as a means to build up data pools for research and innovation?

No defined views on data altruism.

Data intermediaries are useful enablers of the data economy.' To what extent do you agree with this statement?

Agreed. Data intermediaries, be they private actors, will play a vital role in unleashing the latent potential of the data economy. However it is vital that data intermediaries operate in a transparent and trustworthy manner, and give users maximum control over how their data is collected and used. We note however that as things stand it would be difficult, if not impossible, for governments to create trusted data intermarries without first correcting the imbalance in market power that exists in data funded and data driven markets.

Currently a small number of firms have established a dominant position in data funded markets, exploiting the powerful network effects evident in these markets and acting as de facto digital gatekeepers. If data intermediaries are to have any real effect in putting users in control of their data, this situation will need to be corrected through a mix of both competition law and targeted ex ante regulation of digital platforms with significant market status.

Section 2.2 - Specific questions on future actions: identification of high-value datasets

The establishment of a list of high-value datasets, to be made available free of charge, without restrictions and via APIs, is a good way to ensure that public sector data has a positive impact on the EU's economy and society' To what extent do you agree with this statement?

We agree that defining a list of high value data sets across the single market, and encouraging the use of open APIs, common standards and governance protocols would certainly be helpful in maximising the value of public sector data. In particular, looking at the response to the Coronavirus crisis, access to insights based on epidemiological and mobility data could be vital in developing strategies to exit lockdown and restart the economy, and in a way that does not threaten a second wave of infections. In principle, we agree that such high value data sets should be made available to third parties free of charge and via open APIs, for them to combine with their existing data sets in order to develop more complex and relevant insights. Where public bodies, or those acting on their behalf, have made investments in the underlying data infrastructure or capacity, they should at least be able to guarantee that a fair remuneration model covers those costs.

According to your experience and the expected potential of concrete datasets, indicate up to three specific datasets that should be listed in each of the thematic categories of high-value datasets, as referred to in Article 13(1) of the Open Data Directive:

Specific datasets

Geospatial

Earth observation and environment

Meteorological

Statistics

Companies and company ownership

Mobility

Section 2.3 - Specific questions on future actions: the (self-/co-) regulatory context of cloud computing

Does your organisation use and/or provide cloud or edge services?

Yes

> Do you believe the cloud market currently offers the technological solutions that you need to grow and innovate your business?

To a large extent, yes. Our experience of the cloud market is that there is sufficient capacity and diversity of vendors to ensure that we can adequately procure cloud hosting and data infrastructure solutions necessary to power our digital transformation.

> Do you feel that your organisation's sensitive data is adequately protected and secured by the cloud services you use?

Yes. We are confident that our cloud partners and vendors apply best in class security features and protocols. We would underline that security responsibility does not sit exclusively with the cloud vendor, but should also be within the remit of internal security and privacy teams.

> Have you experienced problems in the context of the current functioning and constitution of the market for cloud services in Europe?

No. In our view the cloud market in Europe is sufficient competitive and structured in a way that ensures we have been able to procure cloud services where required to power our digital transformation, and to scale those services rapidly when needed. We do not perceive that there are any structural or functional problems with the cloud market in Europe that the Commission should address through regulation. Of course additional guidance for firms looking to procure cloud solutions is always helpful in assessing those that best satisfy requirements around security, data protection and interoperability.

> Do you perceive risks emerging from the current functioning and constitution of the market for cloud services in Europe?

We understand that the Commission is concerned about the growing dependency of European businesses on cloud service providers from outside of Europe, diminishing our strategic autonomy in a key technology area and hampering the drive towards digital sovereignty. Vodafone supports the overarching aim of the Commission, to create European digital champions; however we believe that the cloud market as currently structured does not present any existential risk in terms of strategic autonomy or dependency. That is not to say that the market could be improved however, in terms of supplier diversity and resilience. In particular, we believe that current measures to promote interoperability and switching between cloud service providers are insufficient and the market would benefit greatly from additional measures introduced to support switching between service providers.

More regular switching will help to increase competition, improving service levels for customers and ensuring that they do not become hostage to aggrieve or discriminatory pricing. It will also help to ensure a diverse range of suppliers in the market place, which we believe is a key factor in ensuring overall resilience, so that if one cloud provider is taken down by a cyber-attack, the end customer has the ability to fall back on another cloud service provider. This is particularly important for providers of critical national infrastructure and financial services, where any outage could have serious negative consequence.

As such we encourage the Commission to build on existing self-regulatory scheme in relation to interoperability and switching and move towards a co-regulatory model, where service providers are obliged to meet minimum standards around interoperability and porting of customers and their data. We understand the Commission interest to introduce requirements for CNIs to diversity their cloud infrastructure and Vodafone is committed to helping our customers diversity as effortlessly as possible

> Does your organisation have flexibility to procure/adopt new and innovative cloud solutions if they emerge on the market?

Yes, our digital strategy has positioned the company in order to take advantage of new cloud solutions as they become available to drive efficiencies, increase capacity and open up new revenue streams.

Case Study I: IBM & Vodafone Business Partnership

IBM and Vodafone have partnered to provide customers with the open, flexible technologies they need to integrate multiple clouds and prepare for the next wave of digital transformation enabled by AI, 5G, edge and Software Defined Networking (SDN).

The venture will co-develop new digital solutions, combining the strengths of Vodafone's leadership in IoT, 5G and edge computing with IBM's multicloud, industry expertise and professional services capabilities

Case Study II: Vodafone Neuron

Vodafone selected the Google Cloud to host its strategic cloud platform for data analytics, business intelligence, and machine learning. Vodafone's Neuron big-data analytics platform allows the company to utilize real-time data analytics to gain unique insights into its business. Those insights will help the operator to further enhance its customer services, network planning and optimization, and to provide personalized offers to customers.

Neuron will leverage Google Cloud to bring multiple data sources into a standardized format and to enhance operations by making Vodafone's existing software cloud-compatible, enabling local markets to utilize new platform capabilities without disrupting existing campaigns.

Vodafone is also using Google Cloud Platform (GCP) for hybrid infrastructure and containerization and to develop its next-generation business intelligence platform. This will deliver insights faster and in a more standardized way, making it easier to compare performance across departments and local markets.

> Is your organisation aware of self-regulatory schemes for cloud/edge services (for example, codes of conduct or certification schemes)? How do you believe market awareness of these schemes could be raised?

Yes, we are aware of such schemes (including the code of conduct on data protection and on cloud switching and data portability). The Commission could help in raising awareness of such schemes through communications and outreach or through the introduction of a labelling scheme for cloud vendors. We do not take a strong view on the appropriateness of the latter, although this may be more helpful for smaller business looking to procure a cloud solution but with less expertise on vendor capabilities. We also welcome the proposal that the Commission create a co-regulatory rulebook for cloud services, encompassing all voluntary and co-regulatory requirements applicable to cloud service providers.

> Do you believe a self-regulatory approach is appropriate to identify best practices to apply EU legislation or self-regulation?

Vodafone supports a co-regulatory approach to cloud services in Europe, building on existing self-regulatory measures. While there has been no evident market failure, or serious harm to EU citizens as a result of the current structure, the functioning of the cloud service market could certainly be improved, for example via mandatory interoperability requirements for cloud service providers. Such requirements would ensure that customers could switch easily between cloud service providers, boosting competition and ensuring supplier diversity, necessary to guarantee resilience and redundancy for corporate customers.

We would discourage the Commission from pursuing heavy-handed intervention in this market (for example with requirements around data localisation or outright bans of vendors from certain countries) and believe this would be counterproductive to the overall aim of creating European digital champions. The Commission may look to give incentives to cloud service providers best able to demonstrate compliance with EU rules and values, however this should not amount to protectionism, and it is important that the cloud service market remains open to international providers, based on the principles of fair competition and adherence to EU standards. The Commission should regularly review the effectiveness of existing self-regulatory approaches in the EU cloud market place to ensure these are functioning correctly and to determine whether further legislative intervention is required.

Would it be beneficial for your organisation if applicable rules for cloud and edge would be bundled and corresponding information made available by the European Commission?

No strong views.