

Comments

Response to the ESAs' Discussion Paper on the Use of "Big Data" by Financial Institutions

Register of Interest Representatives

Identification number in the register: 52646912360-95

Contact:

Dr. Friedrich G. Zuther

Telephone: +49 30 2021- 2100

Telefax: +49 30 2021- 19 2100

E-Mail: F.Zuther@BVR.de

Berlin, 2017-03-17

The **German Banking Industry Committee** is the joint committee operated by the central associations of the German banking industry. These associations are the Bundesverband der Deutschen Volksbanken und Raiffeisenbanken (BVR), for the cooperative banks, the Bundesverband deutscher Banken (BdB), for the private commercial banks, the Bundesverband Öffentlicher Banken Deutschlands (VÖB), for the public banks, the Deutscher Sparkassen- und Giroverband (DSGV), for the savings banks finance group, and the Verband deutscher Pfandbriefbanken (vdp), for the Pfandbrief banks. Collectively, they represent approximately 1,700 banks.

Coordinator:

National Association of German

Cooperative Banks

Schellingstraße 4 | 10785 Berlin | Germany

Telephone: +49 30 2021-0

Telefax: +49 30 2021-1900

www.die-deutsche-kreditwirtschaft.de

General comments

The German Banking Industry Committee (GBIC) welcomes the ESA's initiative to stimulate debate on the use of "Big Data" by Financial Institutions. However - Big Data is not changing the rules that operate between banks and their customers; it is simply a valuable tool to better access customer preferences and needs, as well as risk assessment. Many challenges and/or requirements concerning the use of Big Data presented in the Discussion Paper are not specific to the financial sector. This applies, for example, to the given aspects of customer transparency, customer deletion requests, storage/processing/security of data, etc. Rather, the majority of the challenges / risks presented are the result of general regulations (data protection, consumer protection, competition law) concerning all sectors of the economy. The Discussion Paper partially gives the impression that it is a specific issue for the financial sector alone. We would also like to emphasise that Big Data is a concept which is solely based on correlation as an inherent characteristic. The analysis of vast amounts of data allows for the identification of new patterns and correlations that often have not been considered before. Hence, Big Data offers the advantage of a completely new approach to gain new insights, and does not - by nature - claim to be based on causality. This has to be taken into account when considering any safeguards e.g. with respect to consumer protection. So the systemic limits of Big Data prognosis may possibly be as important to take account by the regulator as the potential benefits it can provide.

So - and as also stated by the ESAs in the section dedicated to the 'Regulatory framework applicable to Big Data' - the current regulatory framework, with several horizontal data protection and consumer protection requirements (GDPR, ePrivacy Directive and the new proposal for an ePrivacy Regulation, the NIS Directive, the UCPD, the Distance Marketing of Financial Services Directive, etc.) and sectorial financial legislation (PSD, MCD, CCD, PAD, PRIIPS, IDD, MiFIDII/MiFIR, UCITS, AIFMD, EMIR, Solvency II, CRD IV, AMLD), already addresses the topic of Big Data. Since there is no single source of regulation with respect to Big Data, different legal sources on the European level as well as the duality of European and national regulations, hinder businesses from the use of Big Data due to legal uncertainty. These different sources may also provide unequal conditions for Big Data users.

German banks believe however that the legislative instruments detailed above are flexible enough to cover Big Data, whilst promoting consumer protection and the safety and soundness of markets. Therefore, we are able to ascertain at present, we do not see any reason to launch new regulatory actions specifically covering the use of Big Data by financial institutions. We want to emphasise that the challenges and provisions with regard to Big Data, as well as a possible need for action, should also be examined and implemented at the level applicable to all sectors. Specific regulations for the financial sector relating to Big Data should only be made to the extent that there are only financial sector-specific regulatory requirements/risks that cannot be addressed through general regulations affecting all sectors of the economy. In order to reap the full benefits of Big Data on the one hand and to prevent potential risks of Big Data from materialising, a level playing field between fintechs, payment services vendors and banks regarding regulation is key.

Replies to the questions

1. Do you agree with the above description of the Big Data phenomenon? If not, please explain why. Please also mention whether you consider that other characteristics are relevant to understanding the use of Big Data.

The Discussion Paper is a comprehensive study on the subject of Big Data. However, whilst much emphasis is placed upon new aspects of this phenomenon, aspects of current industry practices are only considered to a minor extent.

For this reason we do not fully agree with the definition of Big Data. From our point of view, Big Data is more evolution than revolution and e.g. the exclusion of traditional data mining is too restrictive for the definition of Big Data. Thus, the definition should be broadened. Another aspect of Big Data is that it is almost inherently connected to the cloud, and to the automatic and fast adoption of new data to the analysis model without human intervention. Therefore cloud or even Blockchain technologies may be required in addition.

At the same time, the Big Data phenomenon commonly featured by the extensive collection and further processing of personal information has given rise to serious privacy concerns. In order to allow for all the benefits of analytics without invading individuals' privacy we believe it is of utmost importance to draw the limits of big data processing and integrate appropriate data protection safeguards in the core of the analytics value chain.

In addition, one subtle - but substantial - aspect is missing: namely the (in)adequacy of Big Data prognosis to take insight into human behaviour. The traceability of such prognosis is not made in a logical sense. Big Data is solely based on the concept of correlation. The analysis of vast amounts of data allows for the identification of new patterns and correlations that often have not been considered before. Hence, Big Data offers the advantage of a completely new approach to gain new insights. The concept by nature does not provide for (or require) causality. Therefore results from Big Data analysis may not be judged as to whether there is a conceivable reason for any independencies. But as humans we like to see our behaviour based on reason and free will to change our history. Correlation is not causality, even if there are no faults or undetected biases in algorithms and they are correct to the very last bit: all prediction machines assume that the future is like the past. If we consider human beings to have free will and to be able to change things, this inadequate assumption may hinder us to be able to make use of our free will. This has to be taken into account when considering any safeguards e.g. with respect to consumer protection.

2. Which financial products/activities are (likely to be) the most impacted by the use of Big Data, and which type of entities (e.g. large, small, traditional financial institutions, Fintechs, etc.) are making more use of Big Data technologies? In light of ESAs' objective to contribute to the stability and effectiveness of the financial system, to prevent regulatory arbitrage, do you consider that there is a level playing field between financial institutions using Big Data processes and those not using them (e.g. because they do not have access to data or the (IT) resources needed to implement Big Data processes) or between established financial institutions and potential new entrants (e.g. Fintechs) using Big Data processes? Please explain.

In the financial sector Big Data is potentially relevant for (credit) risk assessment and anti-money laundering purposes. Indeed, it is already applied to some extent, depending on the underlying definition of Big Data. Other products which are likely to be impacted by this technology are those based on (credit) risk and payments. Furthermore, financial advice could be envisaged as another field to be impacted by Big Data in the future. In general, Big Data has the potential to affect all different sorts of customer financial products and services as well as diverse internal activities of banks. Examples are:

- Developing credit risk policies or models
- Tailor-made commercial offers, taking into account the consumer's individual situation and interests
- Marketing purposes, such as an improvement of the consumer experience, i.e. customer segmentation, market share analysis, proactive marketing campaigns, relationship management
- To detect and prevent fraud and anomalies
- To comply with anti-money laundering and KYC obligations
- Optimising the customer journey

For the types of entities using Big Data it relates to the possibility to have access to big data. It is probably most used today by intelligence agencies and technology giants (Google, Facebook etc.), If Big Data is already applied in the financial sector, this is to our knowledge limited specific (niche) topics partly resulting from the fact, that currently most of the data is stored in many different warehouses.

As far as regulatory arbitrage is considered, whoever can predict the probability of future events or behaviour more accurately has tremendous advantages in the market. This is especially relevant in the financial sector. It is unknown so far what kind of data will enable the most appropriate predictions. Credit scores from social platform data are already in the market. Since data on social platforms (and especially search engines) reflect the needs and future behaviour of the client, this data is potentially more valid for predictions (as Google's influenza predictions have shown) than bank data that mostly reflect the past product usage patterns of the customer. If data portability does not reflect that fact, and banks will have to provide customer data to other market players (and not vice-versa, e.g. tech giants providing data to banks), then banks will have a serious disadvantage in utilising Big Data and the tech giants are likely to gain influence in the financial markets.

3. Do you offer/are you considering using Big Data tools as part of your business model? If so, please briefly describe: i) what type of entity you are, e.g., long established, start-up, a product provider, an intermediary; ii) the service you provide; iii) the nature of your clients; iv) your business model; v) whether the Big Data tools/strategy were developed by an external company or internally and whether you have related agreements with other entities (including non-financial entities)²³; vi) what are the types of data used (personal, anonymised, user data, statistical data etc.) sources of data; and vii) the size of your Big Data related activity and/or forecast activity (e.g. to what extent are business decisions

already taken on the basis of Big Data analysis; what other business actions could be based on Big Data in the future)?

In general, banks consider Big Data as part of their business model in areas where the business depends on it. Big Data is never the core business model, but in many cases it constitutes an important part. Customers are less likely to visit branches of financial institutions. Hence, their desires and needs are often no longer known. Data Analytics helps to provide customers with the right product at the right time via the preferred channel. Data Analytics supports sales management. Hence, it is seen as a necessity to keep pace with the technical advances and to sustain competitiveness. Various statistics programs are used, however banks up to now have relied upon the IT sector to provide the toolchain.

Banks use a wide variety of data. The intensity to which certain types of data are being used heavily depends on the business focus (e.g. retail banking, commercial banking versus investment banking). In general, banks tend to use internal historical data the most.

4. If you are a consumer or a consumer organisation, do you witness any of the uses of Big Data? In what fields?

-

5. Do you consider there are (non-regulatory) barriers preventing you (or which could prevent you in the future) from collecting and processing data? Are there barriers preventing you from offering/developing Big Data tools in the banking, insurance and securities sectors? If so, which barriers?

One obstacle for banks is the regulatory ban on correlating customer data from one business unit with data from another, in order to gain possible new insight. The objective of the prescribed Chinese walls is to avoid potential conflicts of interest. There are no such rules in place for competitors outside the banking sector. This means digital ecosystems retain an "information edge" which translates into a competitive disadvantage for banks. One key non-regulatory barrier at present is access to skills.

It is important, moreover, that banking supervisors do not create new, special and restrictive requirements concerning the use of customer data by financial institutions. There must be a level playing field in the use of customer data by fintechs, banks and other market participants (see question 2 also). This is of crucial importance, since fintechs or payment services providers (for example) are direct competitors to banks. Hence, they have to be subject to the same rules and restrictions with regard to the usage of Big Data, in order to prevent any regulatory disadvantages for banks.

In addition, barriers might result from the new General Data Protection Regulation (GDPR), which restricts the possible extent of data analysis by imposing strong requirements (e.g. data protection by design and default, data minimisation, anonymisation, purpose limitation).

The most important non-regulatory barrier is the high cost for adapting banks' IT environments to make them Big Data capable. Neither data storage and data analytic systems, nor product systems and processes, are designed for the collection and usage of Big Data. In order for banks to commit to the significant investments required, Big Data must offer a tangible advantage - in terms of economic viability or higher customer satisfaction.

6. Do you agree with the above short, non-exhaustive, presentation of some of the main applicable requirements? If not, please explain why. Please also mention whether you consider that other legal requirements are essential and should be mentioned.

The Discussion Paper presents, in general, a fair overview of the main applicable requirements. An explicit reference to competition rules could be added. See our comments in detail:

a) Data Protection

With respect to data protection we mostly agree with the statements in the Discussion Paper. Data protection requirements, and especially those laid down in the EU-Data Protection Regulation (EC) 2016/679 from 25th of May 2018 onwards, are applicable to those Big Data procedures that process personal data. The new General Data Protection Regulation (GDPR) doesn't change already existing key data protection principles (such as fairness, purpose limitation, data minimisation) but refines them,

introducing more safeguards for data subjects and placing a notable emphasis on reinforced and actual transparency. For example according to the GDPR the data subject must be informed regarding the processing and the legal basis of the processing (including the specific legitimate interests pursued by the controller) as well as the existence of new data subjects' rights. Moreover the Regulation introduces for the first time an obligation for data protection by design and default, as a tool to integrate data protection safeguards early in the development stage of new products and services.

One point we would like to correct: according to section 19, consumers shall allegedly have the right to access data relating to them personally. This could be misunderstood as consumers being given a sort of permanent technical access to data stored about them – which goes far beyond the consumer rights given by the data protection regulation. In fact, what the consumer has is certain information rights - for example about the categories of data stored about him/her, and he/she has also - to a certain extent - the right to obtain a copy of that data.

b) Consumer Protection Requirements

Section 25: Along with the statement in the paper, the Directive 2005/29 /EC should affect the use of Big Data technology. This might be due to a misunderstanding. The directive is applicable to unfair commercial practices that directly interfere with consumer privacy, such as cold calling, unwanted e-mails etc. The directive restricts the communication channels through which a market participant approaches the customer. Big Data technologies do their work one step earlier, when selecting the "right customer". If there is legal ground for such a selection, that is answered by the data protection regulation.

Section 26: The directive 2002/65/EC regarding the distance marketing of consumer financial services is replaced by the more far-reaching directive 2011/83/EC (consumer rights directive).

Section: 27: Same as Section 25.

c) Sectoral Financial Requirements

We agree that in principal the regulatory requirements listed in the paper are technically neutral. We also agree, that those requirements can unintentionally affect the use of new technologies, for example when advice given by a financial institution regarding a certain financial instrument or a consumer credit is no longer provided by a natural person but by a software tool provided by that institution. In such a case, the question arises as to whether regulatory requirements designed to govern advice by natural persons should apply to software that submits a proposal for a suitable product to the customer by using Big Data technology.

On the other hand, it should not be forgotten that the regulatory framework for financial institutions is not only to be interpreted as a restriction to the use of Big Data technology, but presumes such technologies - for example where legal acts like MiFID II or CRD IV require

- provisions for a sound and prudent management and business,
- adequate internal control mechanisms,
- functioning and effective safeguards and technical procedures to guarantee the safety of different systems and infrastructure, even in critical events
- systems to identify and overcome potential business risks and avoid losses.

Those requirements can effectively only be fulfilled by using Big Data technologies.

Nevertheless regulatory requirements remain neutral to technology and therefore should not be "over-interpreted" when assessing Big Data issues. However, that is exactly what we think happened in the Discussion Paper with respect to some regulatory aspects. Despite that, we also would get some judicial aspects straight, which we consider as incorrectly described in the paper:

Section 29, 4th bullet point: contrary to the description in the paper Art. 16 (5,), MiFID II does not relate to quality and the continuity of service but to the quality of internal controls and the possibility for relevant authorities to supervise the execution of services, even in case of outsourcing. The reason is that the financial institution - even when cooperating with third parties - remains responsible for the services to be carried out in a regulatory manner.

[Art. 13 of UCITS involves a similar issue]

Section 29, 5th bullet point: according to the statement in the paper, a regulatory-relevant conflict of interest may arise from "certain biases embedded in Big Data systems". The footnote inter alia refers to Art. 23 of MiFID II, which regulates the common principle that every investment firm has to take appropriate steps to identify and prevent or manage every conflict of interest that arises in the course of providing any investment and ancillary services between themselves and their clients, or between one client and another. Without further description of certain procedures used in practice, we are not aware how the use of Big Data could cause a conflict of interest. Moreover, Big Data technology aims at gaining more specific data to identify the customer's individual needs. Art. 7 (3) of MCD.

Section 29, 6th bullet point: the statement refers to the institutions' duty in Art. 13 (6 MiFID I, which is now stated under Art. 16 (6) of MiFID II. This regulation has, from our point of view, no restrictions to Big Data. Moreover, the institutions are obliged to keep records of all their services, business and other measures to enable efficient supervision by the relevant authority. Also the reference to Art. 17 of MiFID II is the result of a misinterpretation. Other than described in the paper, algorithm trading is not a service offered to consumers.

Section 29, 7th bullet point: also the legislative proposal in Art. 26 of the delegated regulation, regarding the establishment of an efficient process for handling complaints with respect to financial instrument services, has no specific reference to Big Data technologies. Instead, the client has the opportunity to lodge a complaint with respect to any financial instrument service with which he or she is dissatisfied. Should a customer complain regarding the use of Big Data technologies, it is more likely to be the case that his or her concern is the way personal data is processed. In this case, the data protection officer, a mandatory appointment under the data protection regulation, is responsible.

Section 30, first bullet point: The passage refers to the common principle of "Fairness", which can be found in different acts (e.g. Art. 24 of MiFID II, Art. 12 of AIFMD, Art. 14 of UCITS, Art. 7 of MCD). Legally, no special duties result from this for institutions with respect to Big Data technologies, despite the data protection regulation containing special rules according to data processing.

Section 30, second bullet point: Art. 24 (3) of MiFID II says that no information given to the customer must be misleading. This does not require any special information relating to Big Data technologies. Extensive and adequate requirements for customer information with respect to different kinds of data processing and categories of processed data can be found in Art. 13 and 14 of the Data Protection Regulation, which is conclusive regarding information duties with respect to Big Data processing. It is also conclusive with respect to the legal requirements when using Big Data technologies for marketing purposes.

Section 30, 4th bullet point: This section refers to an investment firm's duty to assess whether a financial instrument is appropriate for a certain client and the information that needs to be obtained from the client by the adviser for performing such an assessment. This duty requires Big Data technologies, and does not restrict the usage of Big Data.

Section 30, 6th bullet point: This section refers to information duties when offering bundled services such as investment services to a client (e.g. Art. 24 (11) of MiFID II, Art. 12 of MCD, Art. 8 of PAD). The named legal acts do NOT prohibit bundling itself, NOR do they contain any requirements with respect to using Big Data.

Section 31: The regulation on money laundering does not, in fact, restrict the usage of Big Data technologies. In fact, it requires it.

Section 31: This section says that the quoted financial legislation foresees specific data protection rules. As far as this concerns Art. 24 (11) of MiFID II, this is true - but the rules do not foresee a higher protection level than the common data protection rules. Other legislations like the MCD only refer to directive 95/46/EC.

7. Do you consider any of these regulatory requirements as unjustified barriers preventing you from using Big Data technologies? If so, please explain why. Please also explain whether you consider that further regulation (including soft law/guidance, etc. and insofar as it falls within the scope/remit of the ESAs) should be introduced to facilitate the use of Big Data technologies.

GDPR constitutes certain requirements that are not suitable for financial services and that are contrary to special regulatory duties or undermine them. This is most obvious with respect to the right to data

portability stated in the GDPR which could be interpreted as a right to take all data processed by the institution to any other firm or company. This does for example not comply with the duties to transaction reporting with respect to investment services in MiFID II or with respect to payment accounts in PSD II. In addition to that, it would be helpful to create a special legal basis for certain procedures like profiling with respect to suitability tests or other specific technical operations that are required under MiFID II, MCD or other legal acts.

8. Do you consider the potential benefits for consumers and respectively financial institutions to be accurately described? Have you observed any of them in practice? If so, please provide examples. If not, please explain whether you are aware of any barriers that may prevent the above potential benefits from materialising?

Potential benefits for consumers and financial institutions are fairly described in the Discussion Paper. In order to be competitive, financial institutions must be able to use Big Data with the objective, inter alia, of

- improving customer services and product quality through data analysis,
- optimising creditworthiness assessments,
- improving targeted marketing, and
- reducing costs for customers.

On top of that, the use of Big Data offers an opportunity to reintroduce a personal, individual note to banks' dealings with their customers to compensate for the increasing standardisation of products and processes in recent years.

We also believe greater use of Big Data has the clear potential to improve consumer and investor protection and promote financial stability. A broader base of data will enable a customer's personal situation, such as his/her risk appetite or temporary financial difficulties, to be better and more promptly identified. The customer can then be contacted with a recommendation for an appropriate course of action. This could enable consumer and investor protection to be designed more effectively than current instruments allow. Better knowledge of customers also has positive effects on a bank's risk management, and thus on financial stability in general.

Furthermore, Big Data could enable banks to offer new products or services beyond the traditional offering of banks. This would make it possible for banks to progress from pure banking to a broader business focus, enabling banks to further diversify their product portfolio and to spread business risk.

On the barriers, see question 5.

9. Do you agree with the description of the risks identified for consumers and respectively financial institutions? Have you observed any of these risks (including other risks that you are aware of) causing detriment to consumers and respectively financial institutions? If so, in what way? If not, please explain why. Please also mention whether certain risks for consumers and financial institutions have not manifested yet but have the potential of developing in the future and hence need to be closely monitored by Supervisory Authorities.

Many of the potential risks described in the Discussion Paper e.g. less comparability, cross-selling, information asymmetries, accuracy and transparency of algorithms, address general issues that do not apply to financial institutions exclusively.

With regard to the customer's transparency over his/her data being collected, used, consulted or otherwise processed, for what purpose and to what extent: suppliers in other sectors, too, face the challenge of how to inform customers about the use of their data in a way which is brief, straightforward and readily understandable, yet which at the same time is sufficiently precise.

Financial institutions are subject to obligations at least as strict as those for other providers when it comes to consumers' rights to information concerning the data stored about them, especially to the new information duties of the new data protection regulation. The same goes for information about automated decisions (e.g. on a loan application). Regulatory and legal requirements impose further qualitative requirements on banks' credit quality assessments and scoring systems. Take for instance the requirements in place since March 2016 for checking creditworthiness under the European Mortgage Credit Directive. We see no need whatsoever for yet more industry-specific rules.

Introducing any regulatory limitations to the use of Big Data - due to the envisaged risk that customers may not be able to understand the assumptions and limitations of the criteria and methodology used by Big Data analytics - would be the wrong conclusion. If that argument was followed, the political goal of realising the potential benefits of a data economy would not be achievable. It should be closely monitored instead, as to whether any of the envisaged risks do actually materialise in the market. If so, appropriate actions have to be considered.

A potential risk for financial institutions that should be taken into account is the risk resulting from non-transparency of data processing while using Big Data technology, which might lead to compensation claims by data subjects under the new GDPR. Hence, clear guidance to data controllers on how to fulfil the transparency requirements would be helpful. Such guidance, however, should primarily follow a universal cross-industry approach, and not be exclusive to financial institutions alone.

Another risk for customers may be, that if Big Data were to result in open access to data for all sides (as regulation i.e. PSD2 may be understood) – all parties will have the same information about the customers. Analytical methods may conclude similarly on the same data given, so that customers will be treated all the same, i.e. be seen as profitable or not so profitable, and offered or denied products accordingly. Adding the risk that some of the available data may be incorrect or unwillingly leaked (as stated above), this final stage of transparency should be avoided.

While appreciating the benefits of Big Data in risk assessments, it should be considered that predictions from Big Data are probably the best alternative, but they do not claim to be perfect and cannot be made the only reason for decisions.

We can in particular envisage two situations where Big Data prognosis reaches its limits:

- a. Due to "black swan" (events so rare that we do not have valuable material in statistics [yet]) and/or
- b. Faults or biases in algorithms that cannot be detected within the regular (test-)data, or due to the learning aspect within the algorithms

As stated in question 1, the judgement on human behaviour should be based on human understanding, human reasoning and causality, not only on correlation. Human reasoning should always be more valued than machine reasoning, and an appropriate rate of exceptions to machine reasoning needs to be implemented within the guidance rules of all companies.

10. Is the regulatory framework adequately addressing the risks mentioned above? Bearing in mind the constant evolution of technologies/IT developments, and that some of the above-mentioned regulatory requirements are not specific to the financial services sector (e.g. GDPR), do you think further regulation is needed to preserve the rights of consumers of financial services in a Big Data context? Please explain why.

In our opinion the existing regulatory framework is sufficient to preserve the rights of financial services consumers in a Big Data context. Therefore we do not see any further sector-specific regulation. Especially the GDPR provides for comprehensive consumer rights with regard to data protection, which is also suited to cope with the challenges posed by Big Data. If there was evidence that Big Data required any additional regulatory measures, a general approach would be preferable to any industry-specific measures.

Banks may need the regulatory possibility to take higher risks in order to avoid the risks in Question 9

See also answer to question 9

11. Do you agree that Big Data will have implications on the availability and affordability of financial products and services for some consumers? How could regulatory/supervisory authorities assist those consumers having difficulties to access financial services products?

Big Data does not change the market principle that not all financial products and services are suitable for all consumers, and that access to and pricing of these products and services are also functions of understanding a consumer's requirements and capabilities. The advantages of Big Data allowing more accurate predictions of customer preferences and future behaviour will inevitably enhance the provider's capabilities to assess suitability of a product to a customer, or to apply more risk-oriented pricing. Big

Data – when properly applied and often incremented by human intervention - assists in enhancing that understanding, with the aim of delivering “the right product/service at the right price”. This is a desirable effect from an overall economic perspective.

Additionally, it should be ensured that the customer is not treated unfairly when he is not the norm, e.g. a mandatory Facebook profile for a certain service excludes customers without Facebook profiles, unless this is an inherent necessity of the respective service.

Predictions always reflect a certain probability, and therefore can never be certain. GDPR already provides that in case of a decision based solely upon automated processing, the data subject has the right to contest the decision and obtain human intervention on the part of the controller. This can result in an overruling of the automated decision. These checks / overrulings should also be used to constantly improve the algorithms. The regulator could take a general overview of a bank's internal management systems, to adapt the quota of human interventions overruling the machine suggestions with the aim of reducing customer complaints while keeping risk controlled on the other side.

See also answer to question 10.

12. Do you believe that Big Data processes may enable financial institutions to predict more accurately (and act accordingly) the behavior of consumers (e.g. predicting which consumers are more likely to shop around, or to lodge a complaint or to accept claims settlement offers) and could therefore compromise the overarching obligations of financial institutions to treat their customers in a fair manner? Please explain your response.

Generally the very purpose of Big Data is to gain a better understanding of consumer behaviour - this is a matter of greater efficiency, not of radical change of business model. Fair (or unfair) treatment of customers has other reasons than the technical possibilities to gain an advantage more effectively. Any bank which might deliberately choose to treat its customers unfairly will probably also use Big Data to do so even more, and to better hide such unfair treatment. So the regulator should take care of that, without hindering banks from using Big Data in a way that does not compromise a fair treatment of their customers.

13. Do you agree that Big Data increases the exposure of financial institutions to cyber risks? If yes, what type of measures has your institution adopted or is going to adopt to prevent such risks? What could supervisory/regulatory authorities do in this area?

Banks are already handling large amounts of data, and providing effective protection against cyber risks. The (not so) new analysis of the data is only very slightly increasing the risk, with a few more people accessing the data and a few more interfaces to protect. Big Data can also help banks improve the mitigation of cyber risks.

However, we generally expect a higher exposure to cyber risks by financial institutions through the usage of Big Data. The more a financial institution relies on data from (potentially insecure) external sources (e.g. the internet), the higher is the risk of false or manipulated data. With more parties involved, the risk of data leakage or data losses will also increase.

In parallel, the risk for customers is significantly increased. Data once exported from a financial institution to a fraudulent location - or even only to a less-protected place - may be afloat the internet forever, providing possibly confidential information about the customer to the public.

14. Would you see merit in prohibiting the use of Big Data for certain types of financial products and or services, or certain types of customers, or in any other circumstances?

Big Data is a big advance for all types of products, and it would be counterproductive for consumers and banks to prohibit its use. We need to avoid the pitfalls of machine reasoning (basically to use it exclusively, see question 9), but in the first line big data is very valuable.

15. Do you agree that Big Data may reduce the capacity of consumers to compare between financial products/services? Please explain your response.

Big Data only is one of the tools at the disposition of financial service providers, and furthermore it is also increasingly giving consumers access to powerful comparison websites. Individualised products and prices

may reduce comparability – however, customised products will offer more value for each individual. We believe that more individual offers will complement - and not substitute - standard products, leaving the choice to the consumer. Besides, Big Data is not the only driver for the individualisation of products. Other drivers are (in our view) the desire of the customer not to receive just standardised products but also personalised products - as well as the intense competition in the financial sector.

16. How do you believe that Big Data could impact the provision of advice to consumers of financial products? Please explain your response.

In general, advice could be more precise and easier to provide due to the automated analysis. Even in cases where the customer's behaviour has changed, mostly reacting to changes in the life situation (marriage, children, retirement, etc.), those patterns can be recognised by Big Data. Only in those cases where customers deliberately seek change and depart from usual patterns will it be misleading. Those pitfalls of machine reasoning need to be understood (see answer to question 9).

17. How do you believe Big Data tools will impact the implementation of product governance requirements? Please explain your response.

Big Data will assist in designing and bringing to the market products with features, charges and risks that truly meet the interests, objectives and characteristics of the particular target market. Additionally, it can also help in identifying the market segments and even individuals for which the product is considered not likely to meet their interests, objectives and characteristics. Furthermore, distribution channels can be better optimised based on Big Data insights. Additionally, Big Data will make testing and monitoring products and their performance much easier, faster and even more reliable. Product governance must reflect the usage of Big Data above, thus tending to become more challenging for banks.

18. How do you believe Big Data tools will impact know-your-customer processes? Please explain your response.

The application of Big Data does not fundamentally change existing processes, but can render their execution more efficient. What we expect from more data, especially internet-based and network data, is a better understanding of the customers, better estimates and automated process in the KYC context. Big Data could assist in corroborating rapidly different sources of information (and matching these with information provided directly by the customer, in order e.g. to contribute to the assessment that the former is genuine).

On the other hand, onboarding processes of customers might become more extensive e.g. due to various opt-ins and opt-outs resulting from stricter requirements for giving consent to the processing of personal data according to GDPR.

Banks need to access the behavioural data generated by smartphones or IoT devices in the same manner as the manufacturers / or producers of said devices

19. What are key success factors for a Big Data strategy (i.e. the adaptation of the business model/plan towards Big data driven technologies and methods)?

We see the following as key success factors for a Big Data strategy:

- Access to Big Data
- validity of the data in access
- sophisticated analytical instruments
- direct or indirect access to the customers, in order to put analysis in place
- agile data management
- adoption of technologies
- skilled employees
- data security standards

20. What are the greatest future challenges in the development and implementation of Big Data strategies?

The most important challenges are

- finding working business models that earn money,

- overcoming the transition from prototype to final products, which most projects fail to establish at the moment,
- connecting traditional IT systems with new technologies, especially the handling and transfer of unstructured data into one homogenous infrastructure.
- the acquisition of well-trained employees
- data protection (GDPR)

Looking even further ahead, the biggest challenge may be if Google, Facebook etc. gobble up everybody else before they turn on each other!

21. This Discussion Paper refers to a number of measures and tools meant to ensure compliance with conduct and organisational regulatory requirements as well as data and consumer protection rules in the context of big data analytics. Are other measures and tools needed? If so, what are they and what they should cover?

No additional measures or tools for the financial sector – other than those mentioned in the Discussion Paper or recommended in this response - would be required at this stage. However, if we take a look at other fields and sectors, it should be ensured that only the customer gets direct access to his/her raw data besides the data controller. That way, customers can take a look into their data and reconcile it before potentially making it available to other parties. If validated/unmodified data needs to be insured, this should be solved differently (e.g. using digital signature), but the customer should know - and be in complete control of - what data goes to what party. If real-time access to customer data is necessary, this should be highly restricted to regulated parties (due to the risk of real-time processing)

22. How do you see the development of artificial intelligence or blockchain technology in connection with Big Data processes?

Blockchain is likely to put more substantial transaction data in the public domain – although pseudonymous or even anonymous, there will be a different kind of data in the public domain with the risk of losing anonymity (see the design shift from public ledger to interledger structures within ripple).

AI will make reasoning from Big Data easier, but also less transparent. The inherent dilemma of Big Data insights (correlation vs causality) will become even more important.

Additional comments:

23. Are there any other comments you would like to convey on the topic of use of Big Data by financial institutions? In particular, are there other relevant issues that are not covered by this Discussion Paper?

-