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EACB Answer to the ESAs' Discussion Paper on the Use of Big Data by Financial Institutions

The **European Association of Co-operative Banks** (EACB) is the voice of the co-operative banks in Europe. It represents, promotes and defends the common interests of its 28 member institutions and of co-operative banks in general. Co-operative banks form decentralised networks which are subject to banking as well as co-operative legislation. Democracy, transparency and proximity are the three key characteristics of the co-operative banks' business model. With 4,050 locally operating banks and 58,000 outlets co-operative banks are widely represented throughout the enlarged European Union, playing a major role in the financial and economic system. They have a long tradition in serving 210 million customers, mainly consumers, retailers and communities. The co-operative banks in Europe represent 79 million members and 749,000 employees and have a total average market share of about 20%.

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Introduction

The European Association of Co-operative Banks (EACB) welcomes the opportunity to respond to the European Supervisory Authorities' (ESAs) preliminary high-level assessment on 'the Use of Big Data by Financial Institutions'. We appreciate the ESAs' efforts to identify risks and benefits of the use of Big Data for consumers and financial institutions.

An overview of our general comments, as well as our detailed answers to the individual questions of the Discussion Paper (DP), can be found below.

General Comments

Financial institutions possess large amounts of data coming out of broad product offerings and a large customer base. We acknowledge that the monitoring of any emerging risk for consumers and financial institutions, as well as new and existing financial activities, is among the ESAs' tasks. We also recognise that the ESAs' Discussion Paper is generally fairly accurate and complete.

However – 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, although indirectly.

Co-operative banks believe that the legislative instruments detailed above are flexible enough to cover Big Data and to promote consumer protection and the safety and soundness of markets. We do not see any reason to launch new regulatory actions specifically covering the use of Big Data.

Furthermore, we do not believe that regulation could fully and effectively drive customers' behaviour. Consumer preferences, habits and decisions are based on each individuals' multi-dimensional (psychological) background.

Finally, co-operative banks urge that, as far as credit institutions are concerned, the focus should be on the implementation of the existing regulations and that regulatory requirements should not create new barriers or a distortion of competition. It is also important 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.

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.

Co-operative banks believe that the ESAs' description of the Big Data phenomenon is accurate, very extensive and in line with the definition reported in the European Commission Communication on 'Towards a thriving data-driven economy' launched in 2014.

However, we would like to make some specific comments:

- The Big Data phenomenon is not totally new: firms have been collecting and using basic client data (contact details, contract, transactions) for a long time for segmentation and profiling purposes. However, profiling based on the detailed observation of clients' behaviours can be seen as a new element;

- Consumer protection is strongly emphasised but on the other hand security aspects in the growing framework of open banking are missing in the description;

- The DP doesn't look at the liability aspects in data processing (client consent, responsibility for errors, etc.) and at transfers to third parties;

- The DP doesn't mention the sovereignty of Member States or the EU as a whole with regard to platforms with a global dimension;

- In the description of the phenomenon the following subtle but substantial aspect is missing: adequacy of Big Data prognosis. There may be fault or undetected biases in algorithms; and, even if they are correct to the last bit, correlation is not causality. All prediction machines assume that the future is like the past and may fail to factor in human beings' free will. In this respect, as highlighted in the discussion paper, the human factor is there to identify and correct any biases or deficiencies;

- While understanding the possible logic behind the general comment made by the ESAs in paragraph 15, page 12 of the DP, where stating that '*the lack of access to certain important datasets could [therefore] act as a barrier to new institutions entering the market or even existing ones remaining on the market*', the ESAs should not forget that bank and insurance secrecy stated in the laws and regulations naturally prevents the free use of data – for good reasons – except on certain conditions;

- Strict data protection rules (i.e. the upcoming GDPR) could act as a competitive disadvantage for European innovation vis-à-vis firms operating and serving customers in other regions of the world. European competitiveness should not be forgotten; and

- For the sake of correctness, in Paragraph 8, page 9 of the DP, the wording '*Account initiation services'* should be replaced by '*Account **information** services*' as per the PSD2.

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.

Co-operative banks believe that most financial products and activities (both front- and back-office processes) are highly impacted by the use of Big Data technologies. Risk assessment as well as money laundering are already in the hands of Big Data. We believe that insurance, marketing, sales and asset management products will likely be the most affected by Big Data and statistical analytics. We also believe that advice will gradually be dominated by Big Data.
It is important to say that in order to process Big Data one first needs to have access to Big Data. Generally speaking, intelligence agencies, large/giant technology companies followed by the financial sector already use and collect large amounts of data.

Indeed, there is definitely a big difference between subjects who own, can analyse and use data and those who have little or no data or skills. In particular, there may be a substantial difference between Over-The-Top (OTT) players, which collect very extensive and invasive data (e.g. global positioning, email or phone contacts, email content, photos and face recognition, etc.) in real time, and therefore have the potential to offer services on the fly, and financial institutions, which still have a better knowledge and understanding of the costs and above all revenues of identified individuals and corporations. The mix of these two aspects could be an important leverage for development but also a high risk for individuals' privacy, and as such should be monitored and if need be regulated (e.g. in case a player such as Facebook becomes an operative bank).

Generally speaking, we think that whoever can calculate risk more accurately has tremendous advantages in the financial sector. It is unknown so far what data is more suitable for this kind of predictions. Since data on social platforms and especially search engines reflects the needs and the future behaviour of the client, this data is potentially more valid for predictions (as Google's flu prediction shows) than bank data, which mostly reflects a customer's past use of products. If data portability does not reflect this fact and banks have to provide customer data to other market players but not vice versa, banks will be forced to lose the big data race before it begins; in the worst-case scenario, tech giants will cannibalise the financial market.

Moreover, from a regulatory perspective, a harmonious implementation across Member States of EU Directives and Regulations would be a first step to enhance the level playing field across the European Union. This level playing field cannot be found at the moment due to the following elements:

- New actors (platforms and new intermediaries) compete with financial service providers without necessarily being subject to the same regulation or supervision. Same services and risk should equal same rules, regardless of the type of legal entity concerned;

- The distortion of competition between European players and non-EU actors is not comprehensively addressed;

- Under the Payment Services Directive 2 (PSD2), banks should allow third-party providers to access some customer data, thus removing barriers to the exploitation of payment data and fostering competition (without however any reciprocity).
  Due to legacy IT systems in conventional banks, new players like Fintechs are often in a better position to implement Big Data processes. At the moment, new players in the market such as Payment Initiation Service Providers (so-called PIS) and Account Information Service Providers (so-called AIS) are acting freely compared to Credit and Payment Institutions with proper authorisations. Credit and Payment Institutions are under strict supervision from the ESAs. The adoption of the PSD2 should level the playing field among the various actors in this respect. However, according to the EBA's consultation on draft guidelines on the information to be provided for the authorization as payment institutions and e-money institutions and for the registration as account information service providers, there will still be the possibility 'under certain conditions' to waive all information requirements on a national basis (Guideline point 1.4). A true level playing field can hardly be achieved if pan-European PIS and AIS operators can shop for lower requirements depending on the country providing them with an authorisation.

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); 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)?

Co-operative banks are not all at the same stage in using Big Data tools. Some co-operative banks already use Big Data tools, while others are preparing to do so in order to offer better-tailored products.

ii) and iv) Co-operative banks provide services as a 'universal bank', i.e. offering the full scope of banking products across all customer segments and all customary distribution channels. The business model of (local) co-operative banks focuses on proximity to customers. This is ensured by making available a wide network of branches which can be found not only in towns and cities but also in less populated rural regions.

iii) Co-operative banks' clientele covers all segments, both private individuals and legal entities – in particular SMEs due to our history of serving local communities and regions.

v) Big Data tools were developed and are used in many areas. With regard to the Big Data tools already developed, they were developed both in-house as well as with support from external companies.

vi) Co-operative banks mostly use internal historical data.

vii) Nowadays many business decisions are already supported/backed by Big Data analysis. Co-operative banks currently use mainly descriptive analytics; however, the importance of predictive and prescriptive analytics is growing. The business actions that could be affected by Big Data are related to the behaviours, needs and preferences of customers and their understanding in light of possible future customer decisions.

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?

Co-operative banks are of the opinion that there are several non-regulatory barriers preventing co-operative banks from collecting and processing data, now and in the future. These barriers are mainly: legacy IT systems, bad quality of data (including mistakes, old data), budget resources and the cost of investment, access to skilled human resources, ethics, consumer attitudes.

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.

Co-operative banks believe that the DP presents an already very comprehensive regulatory environment, with several horizontal data protection (particularly the new GDPR) and consumer

protection requirements and sectoral financial legislation, including various prudential and organisational obligations for financial institutions using Big Data technologies.

It would have been appropriate to also make an explicit reference to competition rules, restating the importance of subjecting all actors using Big Data to the same ex-post rules.

It is also worth mentioning that in some countries (e.g. Austria, Finland, France, Germany) there are some restrictions relating to use of payment data for Credit Institutions. For instance, restrictions in the Finnish Credit Institutions Act limit the use of payment data for marketing purposes and the sharing of data within a group.[1]

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.

One obstacle for co-operative banks is the regulatory ban on correlating customer data from one business unit to 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 that digital ecosystems retain an 'information edge' which translates into a competitive disadvantage for banks.

Another limitation relates to use of payment data for credit (see question 6).

In addition, in some cases strict EU data protection provisions (e.g. the right to object profiling) could act as a competitive disadvantage for European innovation vis-à-vis firms operating and serving customers in other regions of the world. European competitiveness should not be forgotten.

Co-operative banks believe that no further regulation is needed to facilitate the use of Big Data technologies. We believe that the current regulatory framework (GDPR, ePrivacy Directive, the UCPD, PSD, MCD, PAD, MiFID II/MiFIR, AMLD, etc.) is sufficient to promote consumer protection and the safety and soundness of markets.

We urge that the focus should be on the implementation of the existing regulations and that regulatory requirements should not create new barriers or a distortion of competition. It is also 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. As an illustration, it should be noted that the PSD2 will not allow reciprocity of access to information between credit institutions and the new categories of service providers.

[1] **Act of Credit Institutions: Chapter 15: Section 15**

Disclosure of information to an undertaking in the same consolidation group, financial and insurance conglomerate or consortium

A credit institution or an undertaking belonging to the same consolidation group with it shall have the right to disclose the information referred to in section 14 to an organisation belonging to the same group, consolidation group or a financial and insurance conglomerate referred to in the Act on the Supervision of Financial and Insurance Conglomerates for the purpose of customer service and other customer relationship management, marketing as well as for the risk management of the group, consolidation group or financial and insurance conglomerate, provided that the recipient of the information is subject to the secrecy obligation laid down in this Act or a corresponding secrecy obligation. The above provisions of this subsection on the disclosure of information shall not apply to the disclosure of sensitive data referred to in section 11 of the Personal Data Act (523/1999) nor to data based on the registration of payment data between a customer and an undertaking other than one belonging to the conglomerate. [--]

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?

Co-operative banks believe that the potential benefits for consumers and financial institutions are well described in the DP.

Before providing some examples, we would like to note that while we agree with the description of the use of Big Data tools in risk assessments, we believe two points are missing:

1. Predictions from Big Data is probably the best we have, but it is not perfect for two reasons:

   a) 'Black swans' (events so rare we do not yet have valuable material in statistics); 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.

2. Human free will and ability to change. Human reasoning should always be more valued than machine reasoning and reasonable exceptions to machine-generated decisions should always be implemented. For instance, a bank can be asked to give a customer credit, despite her history and Big Data analysis, because such customer is making a change in his life or profession and probably needs the credit to do so; this flexibility and ability to discern should guide banks' behaviour as well as regulatory requirements and oversight.

Some examples of the use co-operative banks make of Big Data technologies are provided below:

- Co-operative banks, which tend to be heavily focused on the consumer and SME segment of the market, having as a key characteristic that clients can become members, and target a long-term relationship with their customers, offer/sell products and services to their customers based on their needs. In order to do so, some co-operative banks use different product manufacturing techniques to match customer needs with product features with the help of Big Data tools and analysis; by using Big Data analysis they can establish smaller and more detailed segments of customers in order to provide them with the best products.

- Thanks to Big Data tools, co-operative banks are able to react faster and more efficiently to market innovations as well as to changing customer needs.

- Thanks to Big Data, co-operative banks can more efficiently monitor product sales and customer reactions on the offered product features, pricing and distribution channel mix. In case of any discrepancies, co-operative banks can rectify any of these based on the collected data.

- Co-operative banks can provide customers with solid overview of their financial situation, spending and potential capacity to utilise other products. For instance, by analysing their current customers' financial positions and having historical credit risk default data, co-operative bank can also protect customers from taking additional loans that could cause their inability to repay them in the future.

- Using Big Data technologies, co-operative banks can better analyse customer activities within a bank and, in case of any illegal or fraud activities, better react in line with all AML regulations and fight fraud.

- Co-operative banks have a good experience using Big Data technologies in anti-churn activities by:

    - offering customers need-based products/services.
    - proper product/service offering in different life-cycles or financial situations.
    - usage of predictive analytics and market intelligence.

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.

Co-operative banks believe that the risks for consumers and financial institutions are well described in the DP. However, we would like to make some comments on some of the risks described in the DP.

- Paragraph 41: the potential risk of exclusion of certain consumers from certain services should be addressed more broadly than for the financial sector alone considering that digitalisation itself might have an impact here.

- Paragraph 42: the potential risk related to reduced comparability of financial services is not accurate. We would have the following observations on this point:

    - Thanks to recent legislative developments in the area of financial services – MiFID, MCD, PAD, just to name a few – the basic information to be made available by financial institutions in order to allow customers to better compare information has been harmonised. This will allow for better comparison in general.

    - Having said that, it should be recognised that financial institutions might offer different kinds of products as product differentiation is an essential part of efficient competition between competitors.

    - There could be issues of incomparability of information arising where, for example, data relating to a customer but referring to different years is merged, potentially leading to situations where a customer could not receive a service or financial institutions could give credit where it shouldn't be given. We believe however that the market will solve these issues as more experience with the use of Big Data will evolve. Should the market not be able to resolve this, Guidelines or certification mechanisms to standardise data sources, categories or other comparable metadata might have to be considered.

- Paragraph 45: the potential risk that consumers may be confronted with an unexpected amount of advertising. It should be born in mind that it is always possible to ban

marketing (data controllers own registers, common marketing prohibition registers relating to phone marketing). Moreover, it is not in the interest of service providers to overload consumers with unwanted advertising.

- Paragraphs 58-59: the potential risks related to flaws, errors and biases in the functioning of Big Data tools. Risks related to customer data quality and veracity exist and it is necessary for financial services institutions to minimise such risks by way of proper processes, organisational set-up and control functions. It is also necessary to have in place a good complaint handling and monitoring process.

- Paragraph 64: the accent on the challenges linked to budget and human capital is welcomed. Indeed, errors/inadequacies of Big Data tools are more likely to arise if tools are developed without the input of qualified stuff. The need of ensuring that the relevant people, staff and the creation of new multidisciplinary teams with employees of different background is critical and is known. Experts having knowledge from both the data and business fields (holistic view) are demanded. Professional certifications (not only technical-statistical, but also business-related) should be developed and required when operating with Big Data tools.

One further risk we'd like to highlight is that data could be wilfully false. There are bots able to generate traffic or multiple fake identities with the aim to commit fraud against financial institutions, particularly when banks try to use Big Data from external sources. For instance, a bot could generate a fake Facebook or LinkedIn profile with many positive referrals and institutions basing their evaluations that banks would then base their decisions on. As a consequence, tools and processes to identify and remedy these deceitful activities must be developed and deployed.

Finally, we believe that the potential risks described in the DP will only materialise where existing rules/legislation are not applied properly. The list of risks is in a way already mitigated by regulations and not necessarily caused by Big Data tools as such. It is crucial for co-operative banks to have a more harmonised implementation of regulation across the European Union.

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.

Co-operative banks believe that, as described in the DP, there is a very comprehensive regulatory environment (horizontal and sectorial) already in place. We don't think that further regulation is needed. The main challenge is a more harmonised implementation of such framework across the European Union by authorities, for example with regard to the implementation of the GDPR. However, as decision processes are getting more and more data-driven and machine-based, it should be emphasised, that a human override to a technical conclusion should always be made possible, as implicitly outlined by Article 22 of the GDPR ('Automated individual decision-making, including profiling'). Due to the systematic limits of automated systems, there should be internal guidelines in place not only as to when to use an override but also as to how often an override should be used. The percentage should not be zero nor exceed a certain amount.

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. Generally, availability and affordability of consumer products or services (not only in financial services business) cannot be fully even. There will always be conditions that would be beneficiary to certain types of customers (location, technology used, income, status, education) and the current regulatory framework already addresses this. Big Data – properly applied under human control – will allow a better and more precise understanding of customers' needs and capabilities. It should be noted that the traditional model would have often led, less efficiently, to the same conclusions.

In a number of Member States there are already dedicated services or programs in place (by law, market agreement or private initiatives) to catch consumers who have been excluded through normal processes. Regulatory authorities can motivate financial institutions including new and digital-only providers to be as transparent as possible in their communication, disclosures towards customers on products features, distribution channels, service provision advantages and disadvantages, including for Big Data.

12. Do you believe that Big Data processes may enable financial institutions to predict more accurately (and act accordingly) the behaviour 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 speaking, the very purpose of Big Data is to gain a better understanding of the behaviour of consumers so as to better respond to their real needs and not to escape the obligation to treat customers in a fair manner. Moreover, co-operative banks do not consider the fair treatment of their customers as an obligation but as a necessity, as customer satisfaction is the key in an extremely competitive environment.

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?

On the one hand, Big Data does not necessarily change the nature of cyber risks and associated security measures for co-operative banks so long as the data is collected internally to a bank or banking group. There are no major technology differences between Big Data and 'Non-Big Data'. The exposure to attacks has almost exactly the same probability to materialise as IT platforms and systems are based on practically identical processing principles – although in principle the sheer bigger amount (and likely value) of data could increase the probability of third parties targeting banks.

By and large, securing Big Data should follow same security practices needed for all data-intensive operations, e.g., lawful processing, respecting confidentiality requirements and ensuring that data integrity and availability are enforced using relevant technical and procedural controls. Banks use the same industry-grade security controls to protect Big Data environments and related processes as with other data processing areas.

It should also be noted that Big Data, especially when exploited in conjunction with artificial intelligence, can help banks defend themselves from cyber attacks by providing real-time capabilities to gain new insights into vast amount of (log) data.

On the other hand, the digitalisation of society exposes all stakeholders, not only the financial sector, to cyber risks. Deficiencies in the protection of one area or one participant may spread very rapidly to other areas and participants. The risk for customers is dramatically increased. Data once exported from a financial institution to a fraudulent or even only less protected place may be afloat the internet forever giving possible unwanted information about the client to the public.

As bank data is exposed outside of financial institutions, Third Party Providers have to provide data security. Co-operative banks apply heavy encryption standards and 2-factor authentication to support the highest security standards for their customers. Furthermore, regular security checks keep co-operative banks' standards up-to-date.

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?

Co-operative banks believe that prohibiting the use of Big Data would challenge the principle that legislation must remain technology-neutral, and irremediably distort the playing field. The European Union must become a meaningful participant in the digital world.

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

As a general statement, the more products are individualised, the less comparison is possible – regardless of the use of Big Data.

It also should be noted that thanks to Big Data and new technologies, consumers will have access to powerful comparison websites helping them to compare and choose the most appropriate products. For financial services it will be easier to meet customers' demands and needs. Moreover, thanks to recent legislative developments in the area of financial services – MiFID, MCD, PAD, just to name a few – consumers will be more able to compare and switch between service providers in case of dissatisfaction benefitting from the use of Big Data.

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

Co-operative banks believe that Big Data can positively impact the provision of advice.

In general, Big Data for the analysis of consumer data sets will make advice more precise and easier to provide. Indeed, Big Data analytics can use many different types of data sources (including risk) to create a qualified and fair type of advice proposal, thus minimising the risk of advisor subjectivity.

However, in special cases where a change is made or wanted, relying just on Big Data analysis can be misleading. Since advice is mostly asked for and needed in cases where change is wanted, the pitfalls of machine reasoning need to be understood. For example, while we agree

with the description of the use of Big Data tools in risk assessments as described in the DP, we believe two points are missing:

1. Predictions from Big Data is probably the best we have, but it is not perfect for two reasons:

   c) 'Black swans' (events so rare we do not yet have valuable material in statistics); and/or
   d) Faults or biases in algorithms that cannot be detected within the regular (test) data or due to the learning aspect within the algorithms.

2. Human free will and ability to change. Human reasoning should always be more valued than machine reasoning and reasonable exceptions to machine-generated decisions should always be implemented. For instance, a bank can be asked to give a customer credit, despite her history and Big Data analysis, because such customer is making a change in his life or profession and probably needs the credit to do so; this flexibility and ability to discern should guide banks' behaviour as well as regulatory requirements and oversight.

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

Big Data tools can assist co-operative banks in further putting customers at the centre of their business. Rather than developing products and finding target markets, banks can take an outside-in view.

Co-operative banks need to know how to look at their business from the outside-in to know how it is perceived by their existing and prospective customers – how customers experience their lives, how they want to resolve their issues, how the market is aligning itself to satisfy their needs and how a bank's business fits into a consumer's options. Big Data tools will help banks get this insight.

Big Data tools and analytics can positively impact product governance requirements as they optimise workload (costs) and quality of the outcome (product/service). In product development, Big Data tools will help to better ensure that the interests, objectives and characteristics of consumers can be much more precisely taken into account. We also think that Big Data provides better means to avoid potential consumer detriment and helps minimise conflicts of interest.

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, and are of benefit to, 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.

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

The use of Big Data tools will help financial institutions to have a better knowledge of their customers, to verify the accuracy of information and to concentrate on monitoring customers with higher risk profiles.

Recent Directives on credit agreements for consumers (MCD, CCD) stipulate that creditworthiness assessment should take into consideration all necessary and relevant factors that could influence a consumer's ability to repay the credit over its lifetime. Big Data tools can improve this process and generate a lot of information to grant the best financial product to customers and to fulfil credit assessment obligations.

Big Data tools can help the monitoring of customers' current and previous financial and non-financial activities. Provided all these activities are analysed legally and stored securely, they can serve as input for sound KYC processes and be easily used for any AML analysis in the future too. Big Data tools could be an important part of the process, also consenting the possibility to share the results with other banks.

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)?

Co-operative banks believe that the key success factors for a Big Data strategy are the following:

- Direct or indirect access to the customers to put analysis in place;
- Access to Big Data;
- Validity of the accessed data; and
- Security in Big Data processes;

Co-operative banks have clear internal regulations and directives for the use of data within banks. The use of data is in general driven by the IT and business sides. As data might be of higher impact in the future, we expect to focus more on the strategic side of Big Data.

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

Co-operative banks believe that, besides technical issues, the main challenges will be the following:

- The accuracy of predictive models while keeping the process fast enough. This includes real-time events as they are becoming more relevant in the near future; and

- The ability to attract the right skills.

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?

Co-operative banks believe that no additional measures or tools are needed. Consumer protection and fair market conditions as well as IT security are already covered in financial services regulations. Instead, deregulation should be considered.

A challenge related to Big Data remains beyond regulated industries, that is, in the use of Big Data by Fintechs, Retailers or E-shops. We need to make sure that consumers remain in control of their data when it is shared with third parties – particularly in the case of real-time access,

which is more sensitive and exposes consumers to more risks. Consumers should be able to have control over what data goes to what party and, if real-time access to clients' data is necessary, such access should be strictly regulated.

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

Artificial Intelligence (AI) and Big Data processes complement each other. The more data, the more comprehensive and better reasoning and learning. A coherent strategy to develop AI and Big Data hand in hand is needed.

AI will provide banks with undiscovered categories and new views to blind data. Additionally, banks can create new individually optimised products. Banks need to develop better ways to map, reduce and sign data for specific external contexts, but data itself should remain unmodified. Thinking machines are very powerful for this contextual learning when using rewarding and loopback algorithms.

For example, one growing demand is defence against cyber security threats. Some of our members produce as much as 120 GB of audit logging data every day (since 2005) but incident analysis is still, by and large, manual labour assisted by some rudimentary automated tools. AI, combined with other technologies, could recognise anomalies and fraudulent transactions on the fly.

Blockchain technologies can bring significant changes in the modus operandi of financial services. Blockchain technology is still in the early stages and has a potential for system scalability; however, there currently exists no service connecting blockchain technology to Big Data analysis.

The data management capabilities of blockchain/DLT solutions are generally not suitable for any complex queries. Therefore, there is a need to export the data of the executed transactions from the blockchain to a more suitable data store, e.g. for analysis and reporting purposes. The data exported from a blockchain storage contains information about the parties of the transaction. This information adds new valuable data points to Big Data that can be effectively and efficiently processed with artificial intelligence to reveal how different parties are networked and interacting with each other. The transaction party information may also be useful for determining who has rights to access the data in the Big Data system.

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?

In accordance with the TFEU, the internal market comprises an area without internal frontiers in which the free movement of goods and services and the freedom of establishment are ensured. One of the aims of the Commission is to allow banks to provide financial services and consumers to purchase financial products across borders. At the moment, Europe is far from a cross-border market for financial products; for instance, for loans (mortgages and other lending), there are too many hurdles – starting with the difficulty in establishing customer relationships – that reduce the possibility to develop cross-border markets. In particular the unavailability of customers' financial data (i.e. number of loans and historical situation of the customer in the repayment of each loan) limits the development of cross-border markets.

We believe that a holistic consideration of digitalisation, cyber security and data protection policies is needed to ensure citizens and businesses can fully benefit from Big Data advances in

a pan-European dimension. Data protection shouldn't act as an obstacle to digitalisation, and Big Data processes should be allowed to flourish across borders so as to encourage the development of a cross-border financial market.

Contact:

The EACB trusts that its comments will be taken into account.

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