Towards a ‘data-driven’ approach

19 January 2021 | Fintech Future webinar: Banking on Big Data

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EBA at a glance and its work on financial innovation
• The European Banking Authority (EBA) is a **specialised agency of the European Union** set up to achieve a more integrated approach to banking supervision across the EU.

• The EBA was **established on 1 January 2011** as part of the European System of Financial Supervision (ESFS). The ESFS is comprised of the three European supervisory authorities (ESAs): the EBA, the ESMA, the EIOPA, as well as the ESRB, the Joint Committee of the ESAs, the ECB and the Member States’ competent supervisory authorities.

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**Profile**

- to contribute to the creation of a single market for the EU banking sector. The EBA is in charge of developing the **EU single rulebook** on banking
- to promote pan-EU convergence of banking supervisory practices
- to assess risks and vulnerabilities in the EU banking sector which includes the initiation and coordination of the EU-wide stress test exercise
- to promote a transparent, simple and fair internal market for consumers in financial products and services
EBA role when it comes to financial innovation

- to monitor and assess market developments in innovative financial services
- to take account of technological innovation and innovative business models when carrying out its tasks
- to achieve a coordinated approach to the regulatory and supervisory treatment of new or innovative financial activities
- to establish sectoral and cross-sectoral training programmes on technological innovation to build a common EU supervisory culture and consistent supervisory practices, as well as in ensuring uniform procedures and consistent approaches.
- to promote a coordinated EU response by taking appropriate measures to coordinate actions undertaken by relevant competent authorities with a view to facilitating the entry into the market of actors or products relying on technological innovation, in particular through the exchange of information and best practices.
EBA work to date on financial innovation

2020
- Response to EC consultation on Digital Finance Strategy
- Report on Big Data and Advance Analytics

2019
- EBA Guidelines on ICT and security risk management
- ESAs Joint Advice on (i) legislative improvements relating to ICT risk and (ii) on the need for a cyber resilience testing framework
- Report on regulatory perimeter, regulatory status and authorisation approaches in relation to FinTech activities
- Report on the impact of FinTech on payment institutions' (PIs) and electronic money institutions' (EMIs) business models
- ESAs Report on regulatory sandboxes and innovation hubs
- Report on crypto assets
- Guidelines on outsourcing arrangements (includes outsourcing to cloud)

2018
- Consultation on Guidelines on ICT and security risk management
- Report on the impact of FinTech on incumbent credit institutions' business models
- Report on the prudential risks and opportunities arising for institutions from FinTech
- Opinion on the implementation of the RTS on strong customer authentication and common and secure communication
- ESAs report on Big Data
- ESAs Warning on Virtual Currencies
- ESAs Opinion on the use of innovative solutions in the customer due diligence processes

2017
- Report on Innovative uses of data
- Recommendations on outsourcing to cloud service providers
You are invited to register to the EBA FinTech Knowledge Hub:


EBA FinTech Roadmap and FinTech Knowledge Hub

- Impact on business models, prudential risks and opportunities
- Authorisation and regulatory perimeter issues
- Regulatory sandboxes and innovation hubs
- Consumer and Conduct Issues
- Cyber security
- AML/CFT
Key messages of the EBA thematic report on Big Data & Advanced Analytics
Following the cross-sectoral report by the ESAs Joint Committee on the use of big data by financial institutions, and in the context of the EBA FinTech Roadmap, the EBA decided to pursue a ‘deep dive’ review on the use of Big Data and Advanced Analytics (BD&AA) in the banking sector. The aim of this report, published on January 2020 is to share knowledge among stakeholders on the current use of BD&AA by providing useful background on this area and presenting the key pillars and elements of trust that could accompany their use.

EBA observed a growing interest in the use of Big Data Analytics. In particular, more than 25% of EU banks reported to be using Big Data Analytics in customer engagement, risk scoring and risk modelling, fraud detection and AML/CFT processes.
The establishment of appropriate internal governance structures and measures is key, along with the development of sufficient skills and knowledge.

Technological infrastructure refers to the technology foundation in place and entails processing, data platform and infrastructure that can provide the necessary support to process and run the BD&AA.

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To be able to manage data, one needs to know where the data are located, from where they are collected, the type and content of the data and who has access to them.

Have in place a methodology to facilitate the development/implementation/use of AA solutions. The development of a ML project follows a lifecycle with specific aspects, which are different from the approach adopted for a standard business software.

Four key pillars were identified for the development, implementation and adoption of BD&AA. These pillars interact with each other and form the fundamentals for the Advanced Analytics process.
The development, deployment and use of any BD&AA solution could adhere to fundamental ethical principles, embedded from the start into any project, in a sort of “ethical by design” approach.

### Explainability and interpretability
A model is explainable when its internal behaviour can be directly understood by human (interpretability) and explanations (justifications) can be provided to understand the main factors that led to its output. Explainability is just one element of **transparency**.

### Fairness and avoidance of bias
Fairness requires that the model ensures the protection of groups against (direct or indirect) discrimination. Use of techniques to **prevent or detect bias**.

### Traceability and auditability
Use of traceable solutions to assist in tracking all the steps, criteria and choices in the entire process, enabling **the repetition of the decision** made by the model and facilitating the auditability of the system.

### Security
**Maintain a technical watch** on the latest security attacks and related defence techniques.

### Data protection and quality
Data should be adequately protected with a trustworthy BD&AA system which **complies with current data protection regulation**. The concept of data quality needs to be considered throughout the BD&AA lifecycle as the consideration of its fundamental elements could **help to gain trust in the data processed**.

### Consumer protection
A trustworthy BD&AA system should **respect consumer rights and protect their interests**. Explainability is one of the keys to address this obligation.
The development of BD&AA solutions is at an early stage with further adoption expected in the future.

The need of necessary competence will become increasingly important when the use of AI/ML techniques becomes more widespread in the financial services industry, raising an important challenge for institutions, supervisors and regulators.

Explainability requirements could follow a risk-based approach and become more stringent as the impact/significance of the model increases.

- Appropriate documentation and sufficient justification of material decisions
- Communication of limitations and data sets
- Use of traceable solution (including model versioning)
  - Include a human in-the-loop (where necessary)
- Model monitoring and periodic update
- Consider third party risks and risks from open source solutions
- Address data security and model security at organisational and management level
- Ensure model outputs do not violate institutions’ ethical standards
Latest trends and developments (one year after the BD&AA report)
Latest trends and developments

EBA’s ongoing monitoring observations

- All EU banks are exploring the use of cloud computing. A notable increase of 26% from 2018 in the use of cloud computing.

- EU banks continued investing in AI and big data analytics. Notably, within 2 years, 12% of the EU banks have moved from pilot testing and development to the implementation of AI tools.

- Overall, 64% of EU banks have currently implemented AI in their processes and services.

Source: EBA Risk Assessment Report 2020
Latest trends and observations
EU regulatory developments on AI (1/2)

A series of AI-related publications (e.g. white papers, reports, recommendations, principles) have been released by EU/national bodies
Latest trends and observations
EU regulatory developments on AI (2/2)

European Commission’s AI strategy

2019
- December 2019 – Piloting of Assessment list on Trustworthy AI
- June 2019 – Policy and Investment recommendations of AI HLEG
- April 2019 – Ethics Guidelines for Trustworthy AI

2020
- November 2020 – Final report on the public consultation on the AI White Paper
- September 2020 – Digital Finance strategy
- February-June 2020 - White Paper on AI

2021
- Q1 2021 – Legislative proposal on AI
- Q1 2021 – Updated Coordinated Plan on AI
- Q1/Q2 2021 – Call for advice to the ESAs for potential guidance to the finance sector