# Artificial Intelligence and FinTech Technologies for ESG Data and Analysis

### The EU's Political Agenda: Sustainable Finance and the Fintech Action Plan

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The size of sustainable investment market has grown considerably in the last decade to over USD40 trillion USD according to a study by Opimas  $(08/2020)^1$ . It is estimated that sustainable investments have now reached about 44% of the total financial market assets. Meanwhile, over 3600 financial institutions in the world have signed the UN PRI stating that they integrate sustainability assessments into their investment choices.

After falling 12% over the first quarter 2020 to USD 846 billion, assets in sustainable funds rebounded by 25% in the second quarter and reached an all-time high of USD 1,061 billion at the end of June<sup>2</sup>. According to the GSIA (12/2018), around 75% of assets were held by institutional investors and the remaining 25% by retail investors. Most sustainable investments were allocated to public equity (51%) and fixed income (36%) and the remainder is split between real estate, private equity, and other types of assets<sup>3</sup>.Regardless of this growth momentum, financial market participants often do not have robust and granular ESG data, comparable metrics and transparent methodologies in place to adequately communicate their decision-making processes through the lens of sustainability and this conundrum remains despite a proliferation of ESG rating systems, standards and KPIs, all referring to ESG performance measurements.

The multitude of voluntary reporting and communication standards, and the fact that rating agencies have quite different objectives, and hence use very different formats and metrics, can make it difficult for investors to gain insights into the clarity, comparability and consistency of the reported ESG information. Companies often complain about the complexity and costs of having to report by referring to different sustainability frameworks and standards, and the lack of common definitions for sustainable activities often does not add anything to the quality of the data or the information provided.

This lack of comparability of ESG data, metrics and approaches is also the basis of the growing demand for ESG raw data by investors, many of which rely on rating systems offered by Sustainable Service Providers (SSP) to bridge the gap. However, these data providers are currently predominantly unregulated and the lack of transparency regarding SSP methodologies make it difficult to correctly assess the ESG what evaluations.

It is therefore necessary that data providers, analysis and ESG service providers clarify the sources of the information (e.g., use of public information and / or questionnaires sent to companies and / or engagement activities with the assessed companies and / or the future European database) the proportion of estimates used and how those estimates are being calculated<sup>4</sup>.

<sup>&</sup>lt;sup>1</sup> Opimas, "ESG Data Integration by Asset Managers : Targeting Alpha, Fiduciary Duty & Portfolio Risk Analysis, 2020, http://www.opimas.com/research/570/detail/

<sup>&</sup>lt;sup>2</sup> Morningstar Manager Research, July 2020, "Global Sustainable Fund Flows",

https://www.morningstar.com/content/dam/marketing/shared/pdfs/Research/Global\_Sustainable\_Fund\_Flows\_Q2\_2020.pdf <sup>3</sup> GSIA, "Global Sustainable Investment Review 2018", http://www.gsi-alliance.org/wp-content/uploads/2019/06/GSIR\_Review2018F.pdf <sup>4</sup> ANE and A DM "Goll for a Former Parallelian for the marketing of ESC data and related a privace"

<sup>&</sup>lt;sup>4</sup> AMF and AFM, "Call for a European Regulation for the provision of ESG data, ratings, and related services"

The availability of comparable ESG raw data remains the main hurdle for investors, well ahead of the costs and limited advanced analytical capabilities. For reference, BNP Paribas in its studies presents a non-exhaustive list of issues related to ESG data<sup>5</sup>.

Due to the lack of trust in the ESG information communicated by companies, a Fintech ecosystem has emerged that aims to go beyond corporate self-reported data sources which in turn also have inherent reporting biases.

These Fintech firms are leveraging new technologies: big data based on asset-level information, natural language processing (NLP), the Internet of Things (IoT), satellite imagery, blockchain and robo-advisory. If properly developed and integrated, these new technologies and the alternative data sets could provide investors and other decision-makers a significant competitive advantage. The Fintech areas deemed most promising in the sustainable finance sector are crowdfunding, tokens, distributed ledger technology (DLT), artificial intelligence (AI) and big data.

The EU's Fintech Action Plan for a more competitive and innovative European financial sector<sup>6</sup> (more recently, the *Digital Finance Strategy*<sup>7</sup>) and the *Sustainable Finance Action Plan* as of March 2018 represent important pillars of the current European political agenda. Although ESG and digitization have been treated as separate areas for a long time, they have some common characteristics and great potential when combined.

The COVID-19 pandemic offered EU countries the opportunity to rethink traditional finance models and to rely more commonly on technology while exploring the potential for connecting Fintech and Sustainable Finance, with references to the eco-sustainable segment<sup>8</sup>.

The EU's Taxonomy 2020/852 for economic activities is aimed at defining when an activity can be considered sustainable from an environmental point of view, while the EU regulation on the disclosure of non-financial, sustainable information (SFDR) 2088/2019 requires financial market participants and financial advisors to publish information on their policies regarding the integration of sustainability risks in their investment and advisory decision-making processes, on their websites and in pre-contractual documents.

Furthermore, when a financial product is marketed in the EU for its ESG characteristics the reporting must include information on how these characteristics are met in relation to the EU Taxonomy. The European Commission is also considering clarifying within MiFID II and other relevant texts the fiduciary and organizational duties of financial services operators in relation to ESG factors (e.g., suitability testing and product governance). Finally, The European Security Market Authorities (ESMA)<sup>9</sup> and The European Banking Authority<sup>10</sup> are required to integrate ESG factors into their supervisory assessment tasks.

The use of technology in financial services and, in particular, in the sustainable finance sector, therefore can have the potential to channel financial resources to environmentally sustainable businesses in a more efficient way. Fintech can help reporting while transmitting extensive, robust, and material data at speed, thereby reducing research costs, creating resource efficiencies and synergies, and improving the price of environmental risks and investment opportunities.

<sup>&</sup>lt;sup>5</sup> BNP Paribas,2019, "Fintechs and the ESG data challenge", "... low correlation between ESG data providers due to inconsistent methodologies and data sources, inconsistent data across asset classes, lack of forward-looking data for scenario analysis, insufficiently granular data to measure impacts at a local level, no robust link to the UN Sustainable Development Goals (SDGs), low frequency of data updates, low trust in the quality of company-reported information with inconsistent methodologies and disclosures, difficulty in linking ESG performance with financial performance and preferences of the end individual beneficiary (retail investor /pension saver) not integrated".

<sup>&</sup>lt;sup>6</sup>European commission <u>https://ec.europa.eu/info/publications/180308-action-plan-fintech\_en</u>

<sup>&</sup>lt;sup>7</sup> European commission <u>https://ec.europa.eu/info/publications/200924-digital-finance-proposals\_en</u>

<sup>&</sup>lt;sup>8</sup> EBI working paper, 8/2020, Eugenia Macchiavello, Michele Siri, "Sustainable Finance and Fintech: Can Technology Contribute to Achieving Environmental Goals? A Preliminary Assessment of 'Green FinTech''

<sup>&</sup>lt;sup>9</sup> ESMA, 4/2019, "Final Report. ESMA's technical advice to the European Commission on integrating sustainability risks and factors in the UCITS Directive and AIFMD, <u>https://www.esma.europa.eu/sites/default/files/library/esma34-45-</u>

<sup>&</sup>lt;u>688\_final\_report\_on\_integrating\_sustainability\_risks\_and\_factors\_in\_the\_ucits\_directive\_and\_the\_aifmd.pdf</u>

<sup>&</sup>lt;sup>10</sup> EBA, Discussion Paper on management and supervision of ESG risks for credit institutions and investment firms (EBA/DP/2020/03), <u>https://www.eba.europa.eu/calendar/discussion-paper-management-and-supervision-esg-risks-credit-institutions-and-investment</u>

## Mastering the ESG and SDG Agenda with Fintech and Artificial Intelligence

By Martina Macpherson

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We are in the early stages of the Fourth Industrial Revolution (4IR)<sup>11</sup>, a fusion of advances in artificial intelligence (AI), robotics, the Internet of Things (IoT), 3D printing, genetic engineering, quantum computing, and other technologies.

The journey to digital transformation is at 4IR's core and decision makers and analysts aim to make everyday processes simpler and more efficient. The aim is to fuel innovation and take advantage of new opportunities, new business models – within the boundaries of regulatory obligations.

There is a large potential for AI to contribute towards global economic activity, especially towards Environmental, Social and Governance (ESG) investing. A report released by the World Economic Forum (2020)<sup>12</sup>, found that around 70% of its targets to tackle environmental issues such as climate change and habitat loss, as well as social issues ranging from poverty through to inequality, could be tackled by harnessing the power of technology. Looking at the next decade, the WEF gives predictions, based on the applications of today, on what can be achieved in health, clean energy, industry, innovation and infrastructure.

*Vision2030*<sup>13</sup>, launched at the World Economic Forum Annual Meeting in January 2020, provides a focal point for the mobilization of a more concerted and cooperative effort to apply advanced technologies to the achievement of the *United Nations Sustainable Development Goals* (U.N. SDGs). It serves on one hand, as a global node and facilitator of networks of providers and users of technology solutions for sustainable development; on the other, it will advance intentional curated efforts, partnership building, government capacity development and finance to fast-track new technology solutions for the Global Goals.

The platform seeks to enable 4IR technology partnerships, focussing on three core objectives:

- Help countries identify and match technologies that address their specific Global Goals implementation priorities.
- Catalyse further collaboration to unlock barriers to breakthrough technology innovations for the Global Goals.
- Proactively convene key stakeholders to cultivate an enabling environment for 4IR innovations to drive positive outcomes.

This Fintech-backed initiative does not stand on its own but supports an ever-increasing trend of hybrid ESG / Green Finance, SDG + financial solutions, backed by public-private partnerships, NGOs, as well as investment firms, global exchanges, and other solutions and services providers.

Meanwhile, many ESG and mainstream financial data aggregators, solutions and index providers have started to leverage Fintech and a combination of AI, and other similar Machine Learning (ML) technologies, to screen, mine and analyse big data, from online sources. They apply AI ontologies to their research outputs to assess, rate, classify, benchmark, monitor, triage and report on extra-financial data sets. They look for the typical ESG indicators, in the context of "trends", "risks", "behaviours", "sentiment" and/or "consistency" criteria, and to Fintech and AI, to identify these issues and potential controversies, in real time.

<sup>&</sup>lt;sup>11</sup> For a definition, see e.g., World Economic Forum, The Fourth Industrial Revolution: What it Means, How to Respond, Jan. 2016: https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/

<sup>&</sup>lt;sup>12</sup> World Economic Forum / PwC, Unlocking Technology for the Global Goals, Jan. 2020, Link:

http://www3.weforum.org/docs/Unlocking\_Technology\_for\_the\_Global\_Goals.pdf <sup>13</sup> World Economic Forum, 2030Vision, Jan 2020, Link: https://www.weforum.org/projects/frontier-2030

AI- / Fintech-powered ESG screening and analysis solutions have become "strategic enablers" that can address some of the inherent ESG information biases and potentially even ESG rating divergences<sup>14</sup> arising from corporate self-reporting, and annualised, backward looking reporting of information. Moreover, corporate disclosures can vary by region, with companies in developed economies in general disclosing more information than companies in emerging economies. In such cases, the "alternative data" is key to endeavour for capturing more information from these "blackbox" companies for extra disclosures.

New Fintech-, and AI-backed business and investment models can go a long way towards addressing key investor concerns and towards while supporting a regulatory push for more consistency and transparency in corporate reporting, auditing and research and ratings analysis<sup>15</sup>, acting as the catalyst for sustainable, ESG, SDG and impact investing at scale.

Potential for artificial intelligence in ESG investing comes from sentiment analysis algorithms which allow computers to analyse the tone, type, and pattern of a conversation by comparing the words used to a reference set and classification system of existing definitions. As ESG investing is evolving towards a more dual and dynamic materiality concept, sentiment analysis in turn needs to constantly evolve to capture different nuances and their context.

However, adopting AI and Fintech such as Blockchain can also pose a significant negative environmental impact. The process for creating and training AI algorithms requires large amounts of computing power and capacity, which in turn consumes large amounts of electrical energy.

Further work needs to be done to address inherent biases in sentiment analysis algorithms that are programmed to replicate and reference existing factors and patterns. If reference points such as ESG definitions, KPIs and frameworks are not clear, information biases and (scope) divergences will remain.

To address these challenges, the Sustainability Accounting Standards Board (SASB) announced, in October 2020, to engage PwC's XBRL Practice to support an XBRL-led non-financial taxonomy<sup>16</sup>. Many regulatory bodies already mandate the use of XBRL for financial disclosures in their jurisdictions. The European Securities and Markets Authority (ESMA)'s European Single Electronic Format (ESEF) and the United States Securities and Exchange Commission (US SEC) mandate XBRL tagging of annual financial reports, as have many other regulators and exchanges. It is hoped that providing a common language for business reporting, XBRL can enhance the usefulness of SASB disclosures.

These latest developments and innovation-centred collaboration efforts between regulators, standards setters, assurance, and innovation providers can provide a meaningful approach for ESG data complexity management.

 <sup>&</sup>lt;sup>14</sup> See MIT Sloan, The Aggregate Confusion Project, 2019, Link: <u>https://mitsloan.mit.edu/sustainability-initiative/aggregate-confusion-project</u> - *MIT Sloan found that We found the correlation among prominent agencies' ESG ratings was on average 0.61; by comparison, credit ratings from Moody's and Standard & Poor's are correlated at 0.92. This ambiguity around ESG ratings creates acute challenges for investors trying to achieve both financial and social return.* <sup>15</sup> See e.g. IPE, Dutch and French regulators in joint call for ESG rating regulation, 16 Dec. 2020, Link: <u>https://www.ipe.com/news/dutch-and-french-</u>

<sup>&</sup>lt;sup>15</sup> See e.g. IPE, Dutch and French regulators in joint call for ESG rating regulation, 16 Dec. 2020, Link: <u>https://www.ipe.com/news/dutch-and-french-regulators-in-joint-call-for-esg-rating-regulation/10049653.article</u>

<sup>&</sup>lt;sup>16</sup> SASB, "Financial Reporting, SASB Engages PwC's XBRL Practice to Support Build of XBRL Taxonomy", Oct 2020: <u>https://www.sasb.org/blog/as-markets-move-toward-structured-non-financial-reporting-sasb-engages-pwcs-xbrl-practice-to-support-build-of-xbrl-taxonomy/</u>

#### The Role of the Verifier in the ESG World

By Matteo Bosco Partner at Conser, AIAF member

The International Monetary Fund published in October 2019 a report<sub>17</sub> outlining that sustainability has become relevant to capital markets. ESG issues can have a material impact on corporate performance potentially causing risks to financial stability through the exposure of the financial system to large losses due to climate change. The Fund urges policymakers to take consolidated action in developing standards, promoting disclosure, transparency, and to integrate sustainability considerations into investment and business decision-making.

It highlights the strategic importance of closing data gaps through the standardization of ESG investment terminologies, and of encouraging consistent corporate ESG reporting that facilitates ESG data acquisition and the assessment of financial materiality by investors. It also emphasizes the role of third-party ESG data verifiers who are monitoring and auditing clarity, consistency and correctness of ESG information.

As outlined above, sustainable investment has gained significant prominence in recent years, but investors still struggle to find consistent and comparable ESG data. One reason is that various sources of information are created at different times and for different purposes in different geographical areas.

Moreover, data sources are constantly evolving, and new ones are being added all the time. The process of arriving at a consistent reporting standard is extraordinarily complex and one can rationally expect that it will take time, multi-stakeholder negotiations and some compromise between regulators, practitioners, and policymakers to find the best and most balanced solutions for a suitable non-financial reporting framework.

In line with these assumptions, the OECD<sub>18</sub> recently called for global guidance and the World Economic Forum<sub>19</sub> announced its cooperation with leading consulting firms to define common ESG reporting standards.

Meanwhile, pragmatism dictates that using multiple sources of ESG information can assist investors in avoiding unexpected risks especially in portfolio construction as demonstrated by research published in November 2020<sub>20</sub>. This research shows that it is challenging to rely on a single ESG data provider for decision-making. Many managers are hence already considering the adoption of algorithms that improve the quantity, quality, and reliability of data.

Technology can bring improvements in all areas of sustainability, from the company level to the efficient allocation of capital. In the latter area, the most attentive and well-equipped managers already rely on various sources of information. Less well-equipped structures can refer to verification tools in the field, e.g., by the ESG Consensus<sup>®</sup>. It offers knowledge and insights from multiple market participants via so-called collective intelligence.

<sup>&</sup>lt;sup>17</sup> FMI, Global Financial Stability Report: Lower for longer, Ottobre 2019, <u>https://www.imf.org/en/Publications/GFSR/Issues/2019/10/01/global-financial-stability-report-october-2019</u>, Chapter 6, Sustainable Finance

<sup>&</sup>lt;sup>18</sup> Boffo, R., and R. Patalano (2020), "ESG Investing: Practices, Progress and Challenges", OECD Paris, https://www.oecd.org/finance/ESG-Investing-Practices-Progress-Challenges.pdf

<sup>&</sup>lt;sup>19</sup> World Economic Forum, Measuring Stakeholder Capitalism: Top Global Companies Take Action on Universal ESG Reporting, September 2020, https://www.weforum.org/press/2020/09/measuring-stakeholder-capitalism-top-global-companies-take-action-on-universal-esg-reporting/

<sup>&</sup>lt;sup>20</sup> ECGI Working Paper Series in Finance, © Florian Berg, Kornelia Fabisik and Zacharias Sautner 2020, Rewriting History II: The (Un)predictable Past of ESG Ratings, November 2020, https://papers.ssm.com/sol3/papers.cfm?abstract\_id=3722087