ESG Insights

CGI & Aalto University Collaboration

ABSTRACT

Sustainability has become important for all companies and the momentum of environmental, social and governance (ESG) themes have never been stronger. Incorporating ESG into financial management grows at a fast pace as investors and regulators are putting more emphasis on sustainability considerations. Key issues, however, such as non-harmonized reporting practices and standards, resource-intensive data collection processes and lack of transparency and comparability across peer groups hinder the effective adoption of ESG data for most investors.

Amid the growing interest in ESG, CGI decided to collaborate with Aalto University in looking for ways to challenge conventional ideas and coming up with new, innovative approaches and solutions for the field. During the summer of 2020, Digital Business Master Class (DBMC) students at Aalto University researched what could be a successful model for an ESG data collection and data hub in the EU.

The graduate-level students with mix of nationalities and areas of expertise examined the challenge from multiple perspectives and through business design methods in cooperation with CGI. The goal was to present concept level ideas and preliminary models on how to collect and process ESG data for financial decision making purposes. Both EU-level perspective and case for SME companies data collection and enrichment were analyzed. As a result, two DBMC student teams delivered reports outlining the opportunities of emerging technology solutions for ESG data production and management in EU.

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INTRODUCTION

ESG continues to be interest for many stakeholders and the movement sees no signs of slowing down. Not least because the EU has a political commitment to be climate neutral by 2050 and the European Green Deal Investment Plan is set to mobilize at least €1 trillion of sustainable investments over the next decade.[1] Reforms like these are likely to have an extensive impact on the entire economic system in numerous different ways that will change both business, financial management and the functions of the financial system over the coming years. ESG investing is no longer a matter of personal choice.

From investors' perspective, the path to net zero emissions and the tightening legal measures will signify new terms for capital allocation as well as for new practices in financial management. This entails improving ESG reporting practices, adjusting investment strategies and aligning internal governance mechanisms. So far, ESG figures have not been part of mandatory financial reporting but the EU has already set to change this, as seen with sustainability disclosure obligations for manufacturers of financial products and financial advisers toward end-investors. However, the lack of standardization in ESG rating methodologies, reporting frameworks and underlying data presents challenges. Thus, investors are having challenges integrating objective and transparent ESG data into their decision making.

CGI is working with financial institutions worldwide to deliver business recommendations to address ESG issues. CGI is also looking for ways to fight climate change within multiple industries with technology solutions that minimize carbon emissions.

As a part of this effort, CGI decided to collaborate with Aalto University to create insights on how to address the issues and challenge conventional ideas with new ways of doing things. During the summer of 2020, students of Digital Business Master Class (DBMC) at Aalto University researched what could be innovated in the ESG field. The DBMC comprised of graduate-level students with mix of nationalities and areas of expertise. Master, MBA, EMBA and PhD candidate students with business, IT, engineering and Arts backgrounds were working in the project. The students investigated ESG data register solutions globally and presented an approach for EU level data-register. Moreover, case for SME ESG data production was examined. SMEs constitute 99% of all companies within EU and they have no means nor resources to produce extensive ESG data whatsoever.

As a result, two Aalto DBMC student teams delivered reports combining concept level ideas and preliminary models outlining the opportunities in ESG field.

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[1] The European Green Deal Investment Plan and Just Transition Mechanism
https://ec.europa.eu/info/publications/200114-european-green-deal-investment-plan_fi

BACKGROUND

Varying reporting standards and the heterogeneous landscape of data providers have placed obstacles to the effective implementation of ESG data in financial decision-making. Various organizations have been working with building the related standards and the relevance of ESG data is growing recognition but there is no definite rules nor an explicit enforcer for the ESG matters.

Few will question the prominence of IFRS or GAAP as the ambassadors of financial reporting. What we are seeing today with ESG is similar to the times before these globally recognized standards but for the field of non-financial reporting. Currently, it is far more complex to capture and report non-financial data than financial. It includes many variations of proxy input methods, as opposed to financial reporting having a set of global standards backing it up, many years in operations, and **established ways** to represent it.

Basically, all economic institutions are required to produce reports on their financial and economic status. Over time, means and processes to produce financial reports have become efficient and it is straightforward to comply with reporting requirements. After all, in its simplest form financial reporting can be backtracked to cash-flow streams and financial commitments. ESG reporting

will be far more complex. Moreover, there are no reporting infrastructure nor means to measure ESG matters of firm's actions. Small firms cannot measure CO_2 emissions as they are measuring their economic activity from a bank balance statement. In order to measure and report, measurement sensors, tools, data collection procedures and related software needs to be developed. It will be extensive infrastructure project to establish ESG reporting at the side of traditional financial reporting.
On the other hand, already now focusing on ESG makes financial sense for many companies because it facilitate top-line growth, reduce costs, minimize regulatory and legal interventions, increase employee productivity and optimize investment and capital expenditures. In fact, global sustainable investments tops $30 trillion nowadays.[2]

Two multidisciplinary Aalto DMBC student teams investigated ESG data reporting with the goal of presenting new concept level ideas and preliminary models for the current challenges. The first team provided a suggestion for operative model of an ESG data hub in the European Union. While, the second team proposed data production and management approach for small and medium sized companies.

[2] Bloomberg Markets (2019)
https://www.bloomberg.com/news/articles/2019-04-01/global-sustainable-investments-rise-34-percent-to-30-7-trillion

Concept for European ESG Data hub

MARKET ANALYSIS

Aalto DMBC team 1 began their work by studying the fragmented market of ESG reporting across the globe. The analysis showed a myriad of private as well as public organizations that work with ESG reporting related matters. However, the operators seem to navigate in muddy waters, since there is no globally agreed rules for sustainability disclosure, ESG reporting standards nor common data collection methods to follow.

This results to problems with the transparency, comparability and accountability of ESG data. More specifically, the quality of data is a challenge due to the fact the data is fragmented.

Current state in ESG data reporting

Reporting frameworks

For a start, a number of organizations focus on the development of ESG reporting frameworks. The providers of non-financial reporting frameworks include for example Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), International Integrated Reporting Council (IIRC), Carbon Disclosure Project (CDP) and United Nations Global Compact. However, non-financial reporting is still optional for many organizations (especially outside of EU) and companies may usually select the

	SASB	IIRC	CDP	GRI
Year founded	2011	2010	2000	1997
Type	Reporting	Reporting	Reporting & rating	Reporting
Target group	Investors	Capital providers	Investors and other stakeholders	Broad set of stakeholders
Focus	Establish and improve industry specific metrics for investors	Establish integrated reporting and thinking within mainstream business practice for both public and private sectors	Provide investors with climate change, water, and carbon data	Empower sustainable decisions through established standards and a global, multi-stakeholder network

Table 1: Frequently referenced standard-setting and reporting organisations.

reporting framework they wish, which augments the inconsistency of the disclosed data. Students argue that even though GRI has been on the field since 1997, SASB (founded in 2011) has a stronger adoption momentum globally. Below table summarizes the frequently referenced standard-setting and reporting organisations.

In September 2020, CDP, CDSB (Climate Disclosure Standards Board), GRI, IIRC and SASB announced a shared vision for a comprehensive corporate reporting system and a commitment to collaborate to achieve it.

Data providers

Students found that there are various ESG rating providers on the market. However there is no mutual agreement between the leading data providers nor common data collection methods, which both worsen the comparability of ESG data and make the data hard to understand. Nonetheless, the below table presents three of the most popular rating agencies, according to the Rate the Raters 2019: Expert Views on ESG Ratings, report by SustainAbility.[3]

Representative Weighted Competitive Strength Assessment							
Key success factor	Weight	MSCI		RobecoSAM		Bloomberg	
		Strength rating	Weighted score	Strength rating	Weighted score	Strength rating	Weighted score
Credibility of data sources	0.13	5	0.625	8	1	4	0.5
Quality of methodology	0.125	6	0.8	7	0.875	5	0.625
Focus on material issues	0.15	5	0.75	7	1.05	4	0.6
Disclosure of methodology	0.125	5	0.625	8	1	6	0.75
Common usage by investors	0.175	6	1.05	7	1.225	4	0.7
Stakeholder involvement in evaluation process	0.125	4	0.5	5	0.625	5	0.6
Usefulness	0.175	7	1.2	9	1.575	6	1.1
Total	**1.00**		**5.53**		**7.35**		**4.85**

Table 2: Representative Weighted Competitive Strength Assessment. Wong, Brackley, & Erika (2019).

RobecoSAM, which was recently acquired by S&P Global, appears to be the most comprehensive and extensive data provider. It ranks with the highest rating in quality of methodology and usefulness of information. These results are considering both Europe and the US.

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[3] Rate the Raters 2019: Expert Views on ESG Ratings
https://sustainability.com/wp-content/uploads/2019/02/SA-RateTheRaters-2019-1.pdf

Government led data hubs

Public data hubs and/or databases have been developed by different countries throughout the years. The following provides a short overview of different hubs in Canada, the United States and Japan. The future ESG data hub model could follow suit of the public hubs, at least what comes to the governance models.

Canada

The most prominent public Canadian database is SEDAR, the System for Electronic Document Analysis and Retrieval. SEDAR is an electronic filing system for the disclosure of documents of issuers across Canada. The system aims at:

- Facilitating electronic filing of securities information as required by the regulatory authorities in Canada,
- Allow for the public dissemination of securities information filed by public companies and investment funds, and
- Provide electronic communication between electronic filers, agents, and the Canadian securities regulatory authorities.[4]

The United States of America

The US has a similar database to Canada, called EDGAR. EDGAR is a database that gathers submissions by companies and others who are required by law to file information with the SEC. Access to the database is free of charge. Information provided by mutual funds (including money market funds), exchange traded funds (ETFs), variable annuities, and individuals can be found on the EDGAR website.[5]

Japan

There are three main standards in Japan for ESG reporting: Guidance for Collaborative Value Creation, Corporate Governance Report, and Environmental Reporting Guidelines 2018. However, due to the lack of strong obligation to **follow** these standards, the Ministry of the Environment has established Secretariat of Environmental Reporting Platform Development Pilot Project. It aims to create a social economy in which appropriate funds flow to the companies involved in sustainable initiatives for the realization of a low-carbon society. It provides a direct communication platform for users as well as disclosing structured ESG data and educating participants for better reporting.[6] Since the governmental authority officially supports it, participants have to follow the public ESG reporting standards.

[4] Ontario Securities Commission (2020)
https://www.osc.gov.on.ca/en/Companies_sedar_index.htm
[5] U.S. Securities and Exchange Commission (2020)
https://www.sec.gov/edgar/about
[6] Secretariat of Environmental Reporting Platform Development Pilot Project
https://www.env-report.env.go.jp/en/outline.html

CONCEPT VISION

Aalto students state that creating an ESG database from 'raw' data is a process that can take years. Therefore, the students propose that a better approach could be integrating three different screens to the data processing: voluntary non-financial reporting data, materiality concepts from SASB and GRI and a third layer with the EU Taxonomy. Analyzing data through these three screens could create better results in the following way:

- Better engagement driven by the voluntary reporting;

- Better prioritization driven by the materiality assessments;

- Better direction towards the EU's commitment to be carbon neutral by 2050 set by the EU Taxonomy.

The EU Taxonomy will profoundly drive the future of ESG reporting, as it is one of the most ambitious initiatives currently in motion to address finance for a more sustainable world. A unified EU Classification System for sustainable activities aims to provide clarity and definition on the activities labelled as 'sustainable'. This step from the EU will progressively fit in an additional element of legality to the non-financial disclosing practices, making it compulsory for corporates to provide more transparent and environmentally driven information.

Eventually, the increasing relevance of ESG in financial decision-making processes as well as the complications outlined above highlight the need for standardized data reporting practices and common data hub. The concept students are proposing therefore aims to:

- Minimizing data discrepancies and inconsistencies due to different reporting standards,

- Providing open access and advanced analytics on peer groups benchmarks,

- Standardizing data proxy input methods, and

- Increasing data quality

Multiparticipant data hub platform model

Students envision that the above points integrate into a multiparticipant data hub platform model, see Figure 1 below. The model involves data providers, operators, contributors and users as the main stakeholders. Further, the platform would centre on data collection, storage, analytics and frontend. The frontend product would be available both as a free open access database and as a SaaS subscription.
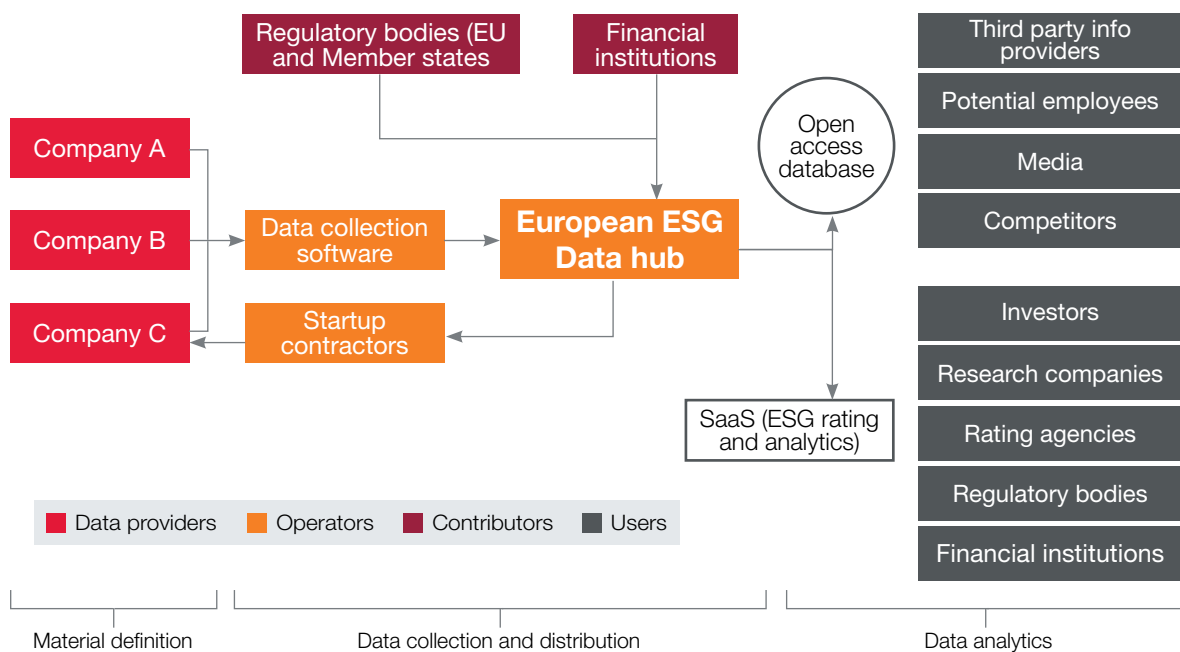

Figure 1. European ESG Data hub model (created by Aalto DBMC students)

Stakeholders and partners

ESG data hub operation involves number of stakeholders and partners. Key stakeholders are regulators, financial institutions, and external data collection contractors. Regulators play a pivotal role in establishing an EU-wide reporting standard and developing the financial support for eligible companies to adopt data collection methods and infrastructure (e.g. sensors for emission measurement). On this regard, the EU could develop an eligibility matrix to allocate financial support based on factors such as country specific ESG reporting maturity, industry, or revenues. Support from regulators could also constitute initial funding for the developing the IT architecture as well as data collection of the data hub. The rationale behind this funding should be the EU's interest to formalize ESG data reporting and making the former available to financial institutions and to other companies to boost competition.

The second key stakeholder group is financial institutions. With ESG data being increasingly important for investors and providing a more comprehensive snapshot of a company's profile, financial institutions need a platform for standardized ESG data. The partnership with financial institutions could be both operative and financial by nature. Financial institutions could contribute to the initial development of the platform (requirements for architecture and data collection) in return for high quality data, efficient architecture, analytics capabilities over potential clients' ESG data.

The third key partner group in ESG data hub are the external contractors to which operators could outsource the development of data collection sensors. The devices not only add to the quality of the data supplied into the hub, but they assure its truthfulness through blockchain technology and intact transmission to the hub. Given the important role the devices play in the operative model, only companies with the financial strength to scale up quickly and meet the increased demand should be screened for the project.

Moreover, data providers i.e. companies that are compelled to report on ESG measures based on legislation are perhaps most important stakeholder group. Basically, data providers would share their data through data collection system that would get the data from company. The incentive for companies to share their data with the European ESG datahub would be lower cost of (mandatory) reporting. Finally, high quality and well published ESG reporting will be most likely also lower cost of capital of properly reporting companies.

More broadly, the user base of the platform would consist of the open access database users and the paid access SaaS users that want to use data for their own activities. The former would mainly consist of parties such as the media, third party information providers and other users that need data for analysis or other use. SaaS users, on the other hand, would be the ones that use the ESG data to understand markets or to make business decisions, such as investors, research companies, rating agencies, regulatory bodies as well as financial institutions.

Contributors would be essential in building the data hub system and subcontractors would deliver the technological implementation regards IoT sensors, blockchain and other possible technology. Other contributors in the model would be the regulatory bodies and financial institutions that set the framework on what data is collected and reported as well as how the frontend of data provision would function.

Data collection and technical implementation

As data quality is of high importance, it is critical that great emphasis is placed on the data collection methods. The varying nature of ESG data – structured and unstructured or even missing, makes current data reporting practices extremely resource intensive, which is why the model envisions a gradual shift from manual data input and reporting to automated processes. Not only would it lead to feeding higher quality data into the data hub, but through the implementation of robotic process automation (RPA), tedious manual work could be minimized. Implementing RPA is suggested to help to save costs in the early phases of setting-up the data hub as well as when scaling it up.

In a later phase, more advanced technologies such as blockchain could be implemented in the process. The transmission of the data from the data supplier to the data hub could be verified and intact with blockchain. The data delivery between companies and the data hub would be provided via IoT sensors connected by access to the blockchain.

It is proposed that the system uses private and permissioned blockchain as it has benefits such as that the data is managed by few nodes rather than all participants. In addition to private blockchain, the system would use IoT technology for data collection. IoT sensors would be used for tracking ESG data in the source of the impact (e.g. production units for production companies or offices for services).

Given the share of structured data that would be difficult to support by automatic reporting and needs to be manually input, the students have identified the need for a credible third-party auditor. To verify the truthfulness and quality of the data supplied. As regulations on ESG data disclosure become more stringent, there could be the case for text analysis of publicly disclosed financial reports as a mean to automatize both structured and unstructured data reporting and implement credible data reporting auditing.

Some attention should also be directed at the frontend of the European ESG data hub. The frontend would account for the analytics view, which the users could use based on their user profile (free/for fee). Especially for large financial institutions using the system in their everyday work, participatory design might help to identify key capabilities.

Finance and cost structure

The European ESG data hub would be an extensive project and requires large infrastructure investments.

Since the data hub strongly associates with the EU's goals, public-private partnership or even a grant from regulatory bodies such as the EU for building the platform could be considered. Public-private partnership has been a proven method for an operative ESG hub, as showcased in the US. Where a public private collaboration was built through the project Partnership for Resilience and Preparedness, which entailed a public database being built and being financed through governmental funds as thought to be beneficial to the greater public.

Implementation and development of the data hub

The implementation of the ESG data hub and of the wider business model requires alignment of the various stakeholders outlined above and the incremental adoption of the different technologies. Students work segments this process in two phases.

Data collection software development

In order to collect the ESG data and run centralized data management and storage, there is a clear need of a data collection software. The software would connect the contributors (companies) and the European ESG Data hub. The main role of the software would be to standardize the reporting practices and formats across companies by providing the companies with prefilled questions and data input slots. The software, comprehensive of automatically collected data through the sensors mentioned and of manually input data would also minimize differences across proxy inputs, which would hinder the later comparability and construction of peer groups benchmarks.

Development of data analytics capabilities

Once the data has been collected from different contributors, it is the operator's role to compile it, store it and create a usable user interface. This would include producing advanced analytics capabilities, for example on peer groups, industry benchmarks and rankings. The proposed business model would include two ways of disclosing the data form the hub:

- Through an open source access database and

- Through a Software-as-a-payment

While the first point only requires basic OLAP capabilities, providing advanced analytics requires more effort. The last phase of the implementation would include increasing the customer volume, and therefore it would be critical to develop the user interface in a lean way and implement continuous feedback to maximize customer retention and continuous usage of the software.

Lastly, the students propose that the ESG data hub operator could consider a further partnership with a financial data vendor as a distribution channel for the licensed version of the ESG Analytics database. The upside of such a partnership lies in the complementarity of ESG and financial data. Being able to add a complementary service to existing financial data information and leveraging a large existing customer base.

Concept for SME ESG platform

SUSTAINABILITY AND SME NEEDS

The Aalto DBMC student team 2 focused on studying sustainability related challenges around European small and medium-sized enterprises (SMEs). Whilst the individual environmental impacts of each SME are generally small in comparison to those of large companies, the cumulative environmental impact of the sector is considerable. SMEs constitute 99% of all companies in the EU[7], and they lack a reliable sustainability ranking index. Thus, the students set their report to examine and provide an in-depth analysis of how a sustainability rating for SMEs could be established. Amongst the guiding parameters of coming up with the methods, the European Union Green Deal, the Paris Climate Agreement and legislation within the European Union were considered, and the focus was on designing a mutually beneficial scalable business model to solve the key question:

"What would be the best method for collecting, managing and reporting SME sustainability data that is accessible, standardised and transparent; enabling investors to assess SMEs' ESG profile"

Characteristics of EU initiatives and SMEs

The students evaluate that sustainability has morphed from the one-dimensional climate aspect into various sectors encompassing everyday human life. The theme has also seeped into business sectors with sustainability ratings being a core value for investors. The lion's share of European companies being SMEs, students propose that a key question European commission is seeking to address is how sustainable SMEs across Europe actually are.

SMEs in the EU are defined as companies that fall in the category listed below.[8]

Company category	Staff headcount	Turnover	Balance sheet total
MEDIUM-SIZED	< 250	≤ € 50m	≤ € 43m
SMALL	< 50	≤ € 10m	≤ € 10m
MICRO	< 10	≤ € 2m	≤ € 2m

SME definition

The 'Europe 2020 Strategy' outlines EU's priority to emerge as a sustainable economy by setting ambitious objectives for achieving energy efficiency and climate actions. The Small Business Act highlights how EU and Member States plan to support SMEs to turn environmental challenges into business opportunities. The Green Action Plan for SMEs provides clear direction and framework on how SMEs can take advantage of the business opportunities that are on offer to help them transition to a green economy.[9]

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[7] European Parliament (2020)
https://www.europarl.europa.eu/factsheets/en/sheet/63/small-and-medium-sized-enterprises
[8] European Commission
https://ec.europa.eu/growth/smes/sme-definition_en
[9] Environment Directorate General of the European Commission
https://ec.europa.eu/environment/ecoap/about-eco-innovation/policies-matters/eu-green-action-plan-boosts-sme-resource-efficiency_en

ESG data can help guide companies and investors alike, in identifying the status of an organisation's sustainability measures. ESG data can be complex and hard to gather and SMEs in the European region lack a common disclosure platform for their ESG data. Owing to the discrepancies in collection methodologies and lack of standardisation, SMEs have seen very little to no opportunities for unwrapping their sustainability data.

Driven by investor sentiments and the proposed EU taxonomy for sustainable activities, ESG data is increasingly becoming a key to accessing investments. Concurrently, the lack of consistent, standardised and structured sustainability data for SMEs can be viewed as a significant gap in the market data.

During the first phase of the research, the student team concentrated on examining the EU's climate change policy, which is under pinned by the Technical Expert Group (TEG) recommendations and the European Green Deal. Various online ESG rating providers were reviewed and it was identified that while ESG rating agencies have emerged to address the need for reliable ESG data on SMEs, the available data is expensive, difficult to access and understand, and lacks transparency.

Based on this research, the importance of the EU taxonomy and the European Green Deal guidelines, the students decided to focus on the environmental objectives, set by the TEG, when measuring performance thresholds for economic activities[10] :

- Climate change mitigation

- Climate change adaption

- Sustainable and protection of water marine resources

- Transition to a circular economy

- Pollution prevention and control

- Protection and restoration of biodiversity and ecosystems

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[10] EU Technical Expert Group on Sustainable Finance
https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/200309-sustainable-finance-teg-final-report-taxonomy_en.pdf

DESIGN SOLUTION OVERVIEW

The student team used platform business approach to develop model that addresses the need of collecting, managing and reporting ESG data on SMEs. In a platform business model, the exchanges happen between multiple stakeholders. The platform harnesses and creates large scalable networks of resources and users that are accessible on demand. Platform can also create an ecosystem of communities and markets to interact and transact, resulting in network effects. Facebook and Alibaba are examples of large platform businesses that deliver ongoing value for many of their stakeholders.

The main stakeholders within the model would be (as depicted in figure 2):

- SMEs
- Platform operator(s)
- Government regulatory bodies
- Innovators interested in accessing EU funds available for technology development related to sustainability initiatives and SME
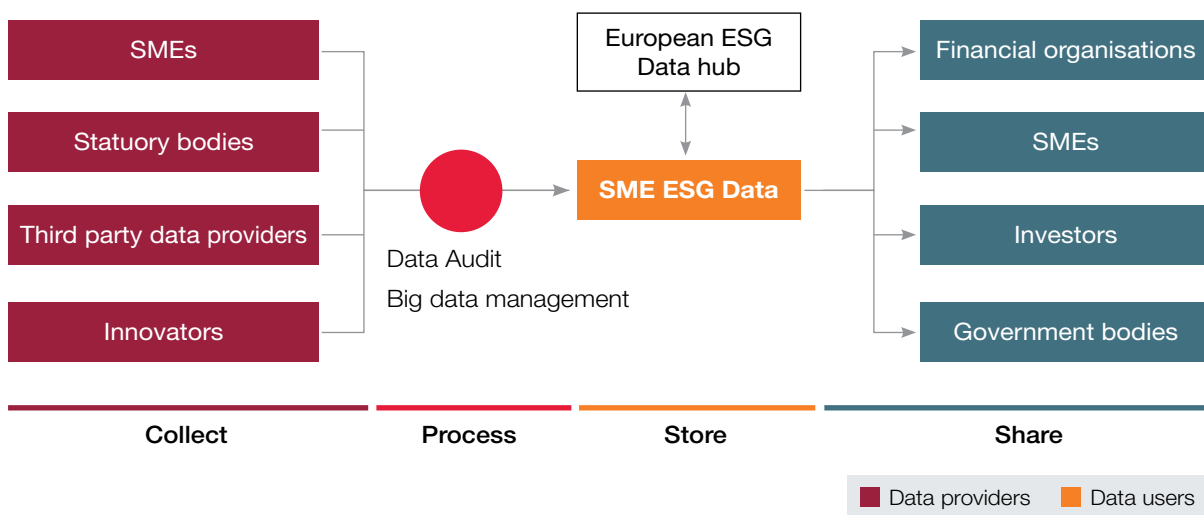- Individual and institutional investors

Figure 2. Ecosystem - Platform Business Design (created by Aalto DBMC students)

The proposed platform design for ESG data collection and management builds on SME needs that include the need for the ESG data to be:

- Readily available
- Accessible
- Standardised
- Transparent

The suggested SME ESG platform design focuses on building an ecosystem and harnessing the network effect of having multiple stakeholders, users and consumers shuffling through the platform. The model aims at achieving this by collecting SME sustainability data and then

sorting, analysing as well as storing the data for its stakeholders to access on demand.

The design considers the access to the platform to be open, with specific data access to be charged. This would ensure that the intellectual property invested, by the platform operator(s), in building and maintaining the ecosystem is rewarded. This in turn means that the platform operator(s) could further invest in the platform development attracting more users and compounding the network effect. The students envision that the SME ecosystem could be a stand-alone platform or it could be combined into a larger ecosystem like the one proposed by the other Aalto DBMC team (Concept for European ESG Data hub).

ESG measurement parameters

The sustainability data consumed by the platform would cover aspects of selected focus industries and their adherence to the European Green Deal. Data collected would include the focus industries as well as their modus operandi to get a definitive aspect of their 'business character'. The focus industries:

- Electricity, gas, steam and air conditioning supply

- Water, sewage, waste and remediation

- Transportation and storage

The above industries were chosen because they have been proven as core sectors where environmental impact, pollution and climate change are concerned in Europe[11]. The six impact parameters or environmental objectives as proposed in the European Green Deal and outlined above are assessed for SMEs in question and thus ratings are established on a common basis.

The six criteria are: Climate change mitigation, Climate change adaption, Sustainable and protection of water marine resources, Transition to a circular economy, Pollution prevention and control, and Protection and restoration of biodiversity and ecosystems. Within each of these criteria, the students identified further parameters of focus for each focus industry. The parameters were then consolidated to create a set of ESG measurement parameters across the three focus industries.

For further analysis, the students recommended to review the ESG measurement parameters with SME and investor focus groups to ensure the alignment with data deemed important by the stakeholders. It should be noted, that in collecting, sorting and handling the data, the platform operator(s) would take upon itself to obey company privacy as stated in the legislation covering companies in their various regions of operation.

ESG data collection and tools

The students propose that the ESG data collection is performed using four key methods as outlined in figure 3.
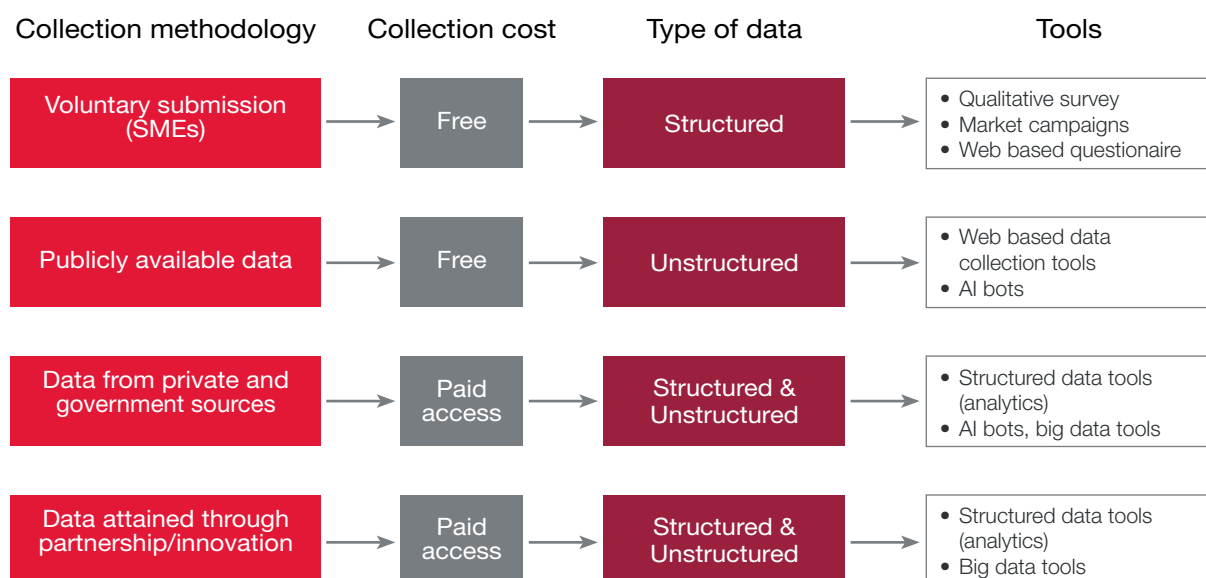
Collection methodology	Collection cost	Type of data	Tools
Voluntary submission (SMEs)	Free	Structured	• Qualitative survey • Market campaigns • Web based questionaire
Publicly available data	Free	Unstructured	• Web based data collection tools • AI bots
Data from private and government sources	Paid access	Structured & Unstructured	• Structured data tools (analytics) • AI bots, big data tools
Data attained through partnership/innovation	Paid access	Structured & Unstructured	• Structured data tools (analytics) • Big data tools

Figure 3: Data collection methodology, cost, type and tools (created by Aalto DBMC students)

The data collection methodologies include:

- Voluntary submission of data from SMEs. This method relies on collecting data from SMEs using web-based surveys, interviews and chatbots. Given that this information is provided voluntarily, students anticipate that the cost of collecting the data is minimal. As the data is collected using pre-set forms and chatbots, the data should be structured.

- Publicly available data using specialised AI bots and scrapping bots. The data would be extracted from websites or publicly available documents. Since the data is publicly available and there is numerous scraping bots to carry out this task, students assume that the cost of collecting this data is minimal. The collected data may be unstructured which needs to be cleansed.

- Data from government and private sources related to mandatory disclosures. While this data is critical for ESG measurement of SMEs, students expect that the platform operator(s) will have to request special access or pay access fee to collect this data. However, if the platform operator(s) were to access data as a paid service, the data collected is likely in structured format, so the data user would not have to spend further time processing and structuring the data for use.

- Data via partnerships with private companies and innovators. By partnering, the platform operator(s) could take advantage of the available data from other sources and new innovations to ensure a vast array and depth of data. Use of innovation for data collection could include satellite imagery and use of geographic information systems for monitoring of waterways. Students anticipate there will be some costs associated with collecting this data.

Once all the related data has been collected it would be audited using machine learning and predictive technology, then sorted and transformed for storage. The ESG data could then be available within the SME ESG platform for the ecosystem stakeholders as well as to be used for predictive/prescriptive modelling, as described in the figure 4.
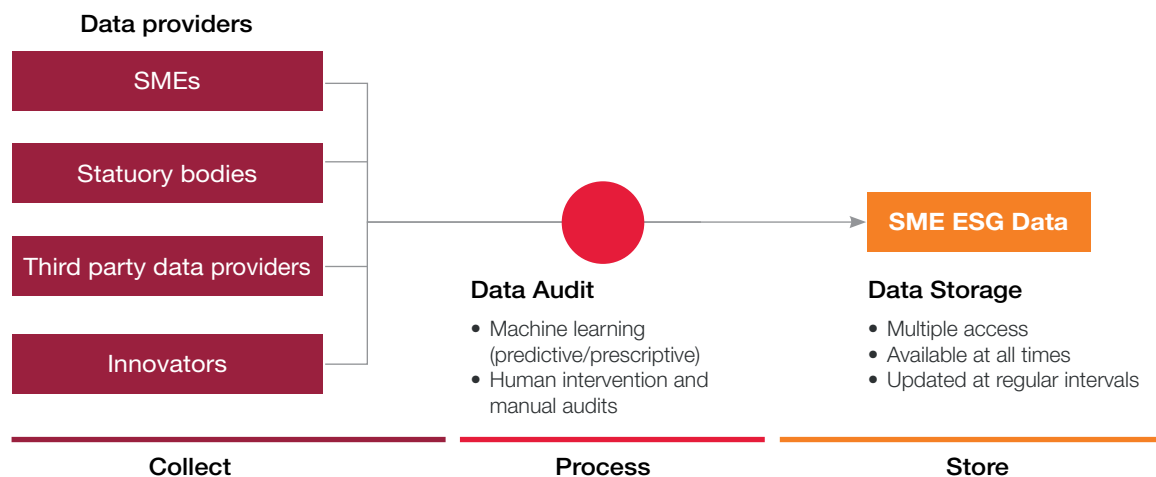

Figure 4: Data Processing and Storage

The SME ESG platform is designed to collect and store the data, in turn promoting the network effect to create a mutually beneficial ecosystem for all its stakeholders. Already available data would be made freely available to interested parties whilst more specific ESG-data would be available according to the rules and legislation put forth by the EU and preferably for fee based on production cost or in business terms. After the data is processed and categorised, it is up to platform operator(s) to audit the data and make sure that any disclosures adhere company policies and data guidelines and are compliant with the EU data regulations on privacy.

Platform revenue model

Clearly, both users of data (e.g. investors) and SMEs have a need for SME ESG data procedures. However, any business investing in a ESG platform needs to be able to have a long term plan to, not only become self-sustainable, but also to generate a profit for its shareholders. Considering the significant investment the platform operator(s) would have to make to design and develop the SME ESG Platform, the students have considered four possible revenue models for the operator(s).

The revenue generation models include:

- **Platform membership**
  The platform would be a combination of open and closed access. While the platform operator(s) promote open data sharing between stakeholders, some of the data that is not readily available in public and the platform operator(s) has paid to collect, should be restricted and accessed by membership only. SMEs, financial institutions, investors and government bodies are expected to be the users for this data.

- **Benchmark ESG report for industries**
  Platform operator(s) could create and provide a paid service in the form of a benchmark report on ESG and sustainability data for specific industries. Students reason that there would be demand for this, since benchmark information is helpful for stakeholders when reviewing SMEs against industry set standards.

- **Consultancy service for SMEs to improve their ESG rating**
  Using the industry benchmark created from the data collected, platform operator(s) could provide outcome based solutions for SMEs who are looking to improve their ESG performance.

- **Consultancy service for SMEs to gain access to investor and EU funds**
  The last revenue source considered by the student team builds on the previous point of consultancy. With the ESG data benchmark, platform operator(s) could provide consultancy services to assist SMEs seeking access to investor and EU funding. If the SME is successful in accessing funding, the platform operator(s) could charge a consultancy fee for this service, see figure 5.
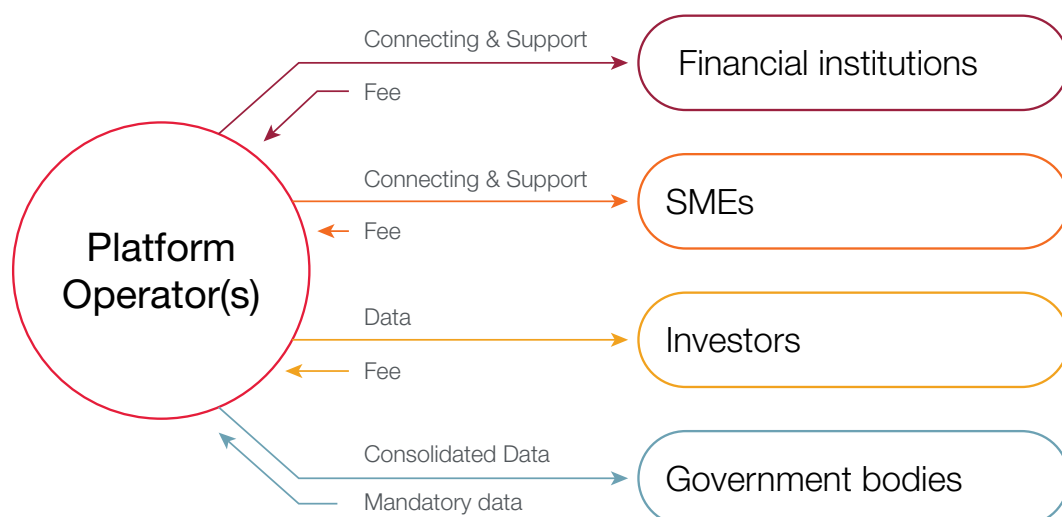

Figure 5: CGI Revenue Model for The Project

Project milestones and KPIs

As outlined in the figure 6 the student team has considered delivering the project in stages. This is to ensure the project delivers a scalable and sustainable business model.

- Stage 1 of the project focuses on building a platform using EU funds made available for technology development to help SME with sustainability measures. In this stage, the platform builder should focus on collecting key data and creating public/private partners in the development of the ecosystem.

- Stage 2 of the project should focus on attracting more stakeholders to the platform with the availability of vast and multi industry data and benchmark. Platform builder could focus on running marketing campaigns to help attract traffic to the platform.

- By Stage 3 of the project, the platform builder should have a platform with multiple stakeholders helping to create network effect and providing the platform builder with a strong revenue stream. At this point, the platform builder could focus on further business development and business expansion within the area of sustainability measurement to improve and maintain the ecosystem.
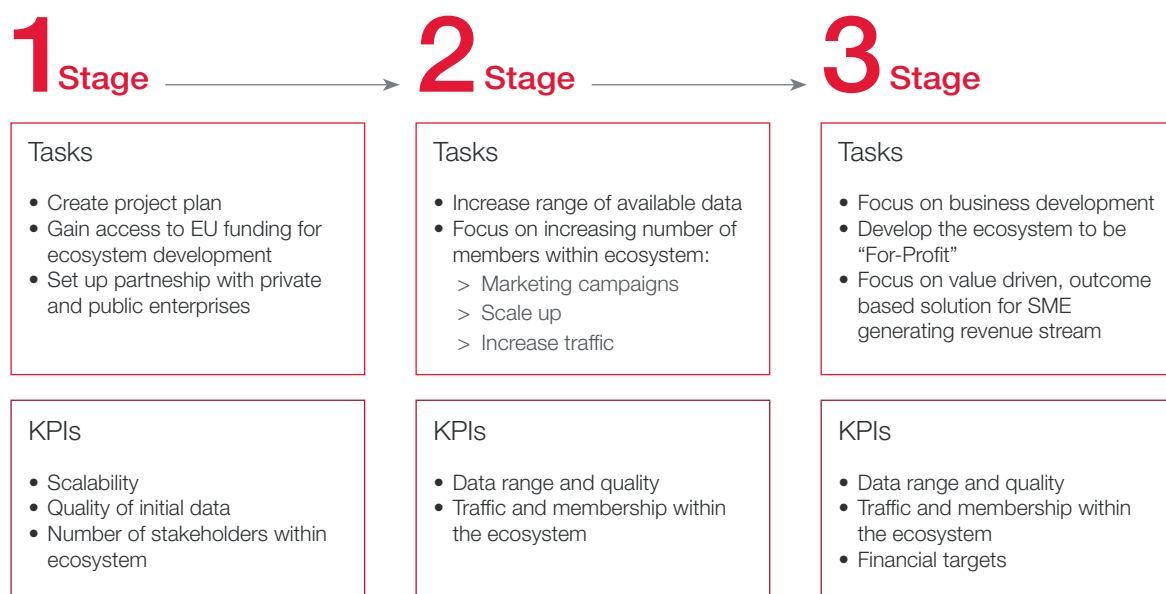
1 Stage → 2 Stage → 3 Stage

Tasks

- Create project plan
- Gain access to EU funding for ecosystem development
- Set up partneship with private and public enterprises

Tasks

- Increase range of available data
- Focus on increasing number of members within ecosystem:
  - > Marketing campaigns
  - > Scale up
  - > Increase traffic

Tasks

- Focus on business development
- Develop the ecosystem to be "For-Profit"
- Focus on value driven, outcome based solution for SME generating revenue stream

KPIs

- Scalability
- Quality of initial data
- Number of stakeholders within ecosystem

KPIs

- Data range and quality
- Traffic and membership within the ecosystem

KPIs

- Data range and quality
- Traffic and membership within the ecosystem
- Financial targets

Figure 6: Project Milestones and KPI

CONCEPT BENEFITS

Building and deploying an ESG data hub has the opportunity to transform the sustainability data markets. The system could compile and answer to the requirements from regulatory bodies, investors, financial institutions and corporations. It could offer a simplified, faster, transparent and improved efficiency of data exchange between its stakeholders.

Furthermore, the ESG data hub will most likely significantly increase the amount and quality of ESG data. What is important is that the better availability of sustainability data would allow for minimizing emissions and other problems. This could be done by harnessing technologies, such as advanced analytics, artificial intelligence and machine learning alongside ESG data.

CGI has extensive capabilities digital platform development, IoT sensoring, data storage, automation, interface architecture without mentioning software development.

CONCLUSION

As outlined in the European Green Deal, tackling the climate and environmental challenges are at the top of the Commission agenda. EU has already started work on transforming and modernizing the economy with the aim to achieve climate neutrality. Current policy aims at reducing greenhouse gas emissions by 60% by 2050 and while this may not go far enough in the minds of some environmental experts, EU plans to set more ambitious climate action in the coming decade. ESG reporting will expand current tradition of financial and economic reporting to include also ESG aspects of firms' and other institutions' activities. That will be a complex and extensive task that involves large number of stakeholders.

The proposed EU regulation for financial institution will introduce consistency and clarity on how institutional investors, such as asset managers, insurance companies, pension funds, or investment advisors should integrate environmental, social and governance (ESG) factors in their investment decision-making process.

On the other hand, non-financial reporting requirements for listed companies and institutions with more than 500 employees are about to be changed to include more extensively ESG related information. Step by step requirements to produce ESG data increase.

Exact requirements and practical implementation of ESG reporting infrastructure are yet to be defined. Whatever will be the level of more detailed regulation, it is clear that extensive digital infrastructure will be installed.

In order to deliver ESG data for use in EU in the forthcoming decade, this report presented two approaches: EU data hub and SME ESG Data platforms to address both EU level challenge to collect, store and process data and SME level challenge to even create and then distribute ESG data.

CASE Fingrid Datahub Oy

Helsinki, July 2018 - CGI was selected to design, build and support a next generation electricity information exchange system for Fingrid Datahub Oy, a subsidiary of Fingrid Oyj, Finland's electricity transmissions operator. The new centralized IT system, called "Datahub," will store and manage data from all of Fingrid's 3.7 million energy consumption locations, driving a wide range of strategic benefits for the utility's nationwide operations, Finland's retail utility sector as a whole, and consumers across the country. Datahub will become mandatory for electricity market participants in 2022 and it will support Finland's transition towards becoming a fossil-free society.

Fingrid Datahub Oy, which was established to operate Databub, will adopt CGI's proprietary central market system to replace its current EDI message exchange system. CGI's system addresses key requirements driven by energy legislation, energy sector demands and Fingrid's own business needs in terms of data processing, protection and security, synchronized electricity retail market processes, and support and maintenance.

Datahub, through advanced process automation, will simplify, speed up and enhance the efficiency of data exchange across the retail electricity market in Finland. For consumers, the Datahub also will support various services to significantly improve the customer experience.

"The energy sector will undergo a major transformation in the coming years," said Asta Sihvonen-Punkka, CEO of Fingrid Datahub Oy. "We are heading towards a clean, reliable and market-driven environment for distributing electricity. Datahub will play a very important role in this market transition."

CGI has built and currently runs two-thirds of all central market systems worldwide, including systems across the Nordics and the UK. These systems are supported by more than 500 CGI central market system experts across the globe.

With more than 40 years of experience supporting the transformation of utilities globally, CGI is partner to 450+ utility providers in the electricity, water and natural gas sectors, including 8 of the top 10 utilities in Europe and North America.

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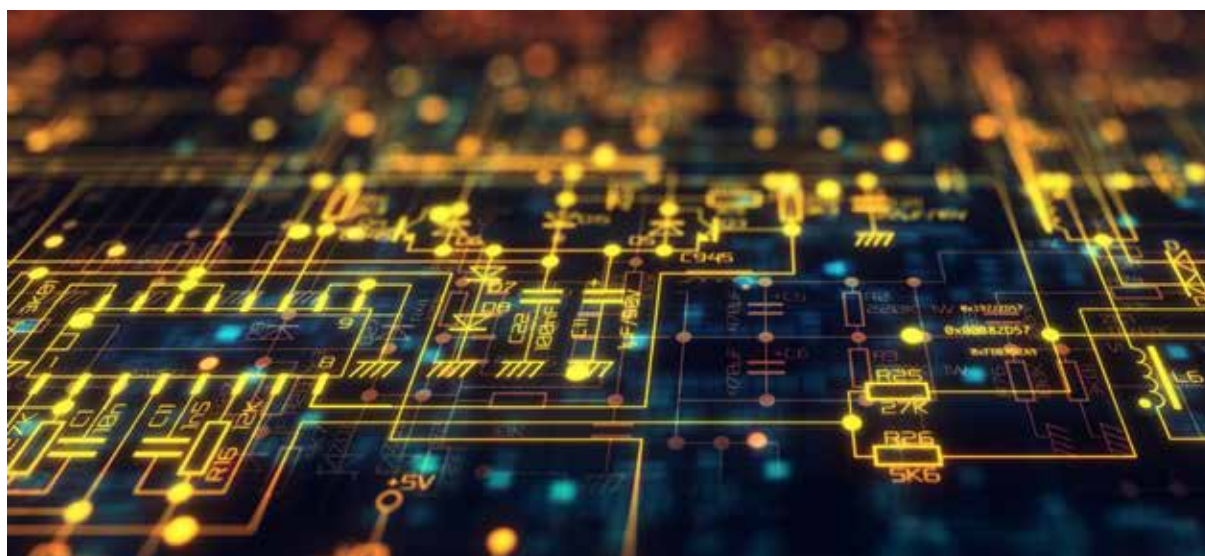
About CGI

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world. Operating in hundreds of locations across the globe, CGI delivers an end-to-end portfolio of capabilities, from strategic IT and business consulting, to systems integration and managed IT and business process services, to intellectual property solutions. CGI works with clients through a local relationship model complemented by a global delivery network to help clients achieve their goals, including becoming customer-centric digital enterprises.

Learn more at cgi.com.