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A fair data-driven economy – The future of Europe

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Summary

Data is expected to bring opportunities and economic growth as new business models for value creation are achieved through collecting and utilising more data more efficiently. At the same time, ethical and security concerns are being raised, and issues of data protection are discussed in the EU and globally. There is a need for a fair data economy that produces benefits for all stakeholders in society.

A Sitra 2021 survey asked 1200 European companies from four different countries about their attitudes and commitment to a fair data economy. This CCR Insights review focuses on questions regarding competitive edge in a data economy and business model changes. In addition to this, suitable conditions for a fair data-driven economy are examined.

Eighty per cent of those surveyed deemed that a data economy could possibly create a competitive edge for their company, and every fifth company had already created a competitive edge with data-based business. The companies operating in the B2G market along with micro companies were the least likely to think that a data economy could create a competitive edge. Even in these company clusters, however, a notable proportion thinks that a data economy has created or could create competitive edge.

The study provides evidence that data-based business requires significant changes to the business models of companies. More than 70% of the companies surveyed had made at least some changes in at least one area of

their business model during the last two years, and the more interested they are in a data economy, the more significant the changes they have made to their business model. The survey also shows that the more into data-based business a company is, the better it implements fair data principles (privacy, ethical code of conduct, transparency, etc.) in their organisation.

The respondents viewed legal complexity, lack of competence in data-driven business models, lack of customer interest in data-based services and lack of technological competence as the biggest challenges to the creation of new data-based services.

Thus, this study provides encouraging evidence that a data economy could possibly create a competitive edge for European companies. This suggests that there will be vibrant competition both in European as well as global data economy markets, provided that companies are willing to take their chances and as long as legal, business, technical and societal conditions are met. This will ensure that citizens, businesses and governments all benefit from a fair European data economy.



Introduction

More and more data is being produced every day and the means of utilisation of data have increased. This is what a data-driven economy relies on: the collection, aggregation and organisation of digital information as well as the analysis, exchange and exploitation of the same. Data flows have already become a crucial part of the modern global economy, and its importance is expected to only intensify. It seems, however, that Europe is lagging behind the United States and China when it comes to a data-driven economy – even though in terms of data protection and governance the EU surpasses its competitors. In fact, many issues have been raised regarding the fair use of data: the rise of so-called winner-takes-all companies, heightened surveillance and cyber-attacks are legitimate concerns to individuals, governments and businesses alike. Despite these risks and the challenges they pose, a data-driven economy also promises innovation, productivity and growth, and provides great opportunities to all of the above-mentioned

actors. This is, in Sitra's definition, at the core of a fair data economy: *'--the rights of individuals are protected and the needs of all stakeholders are taken into account--'* (<https://www.sitra.fi/en/dictionary/fair-data-economy/>).

There are, however, great differences between companies' abilities or willingness to seize the opportunities that a data economy presents. This was evident in the 2021 survey that centred on European companies' awareness, attitudes and commitment to business potential enabled by a fair data economy. Companies from four different countries – Finland, France, Germany and the Netherlands – were surveyed as part of Sitra's IHAN project, which focused on building a European data economy model. In this CCR Insights review, the focus is on business model changes and competitive edge in a data economy, and optimal conditions for a fair data-driven economy are examined beside them.

The future is data?

Businesses that utilise data as a core ingredient, i.e. data-driven businesses, are expected to be highly important in terms of competitiveness in the near future (European Commission, 2020). There is evidence of data driving productivity and resource efficiency gains (Brynjolfsson et al., 2011; Hemerly, 2013).

Survey results show that European companies are willing and prepared to embrace a data-driven economy: more than 80 per cent of those surveyed believed a data economy might possibly create a competitive edge for their company. Almost half of the respondents stated that a data economy had created (21%) or would create (27%) a competitive edge for their company.

| | | Frequency | Percentage | Valid Percentage |
|----------------|----------------------------|-----------|------------|------------------|
| Valid | Yes, it already has | 252 | 21.0 | 21.2 |
| | Yes, it will in the future | 324 | 27.0 | 27.2 |
| | Possibly | 395 | 32.9 | 33.2 |
| | No | 220 | 18.3 | 18.5 |
| | Total | 1191 | 99.3 | 100.0 |
| Missing | System | 9 | 0.8 | |
| Total | | 1200 | 100.0 | |

Table 1. Could a data economy create a competitive edge for your company?

There were some differences between companies that operated in different markets. Companies that operate mainly in the B2B market or in both the B2B and B2C markets were most likely to think that a data economy

could create a competitive edge, whereas the companies that operate in the B2G market have the least faith in a data economy providing a competitive edge for their company.

| | | | Which of the following statements best describes your company? We mainly operate in... | | | | Total |
|---|----------------------------|-------|--|--------|-------------|--------|--------|
| | | | B2B | B2C | B2B and B2C | B2G | |
| Could a data economy create a competitive edge for your company? | Yes, it already has | Count | 75 | 53 | 96 | 10 | 234 |
| | | % | 20.2% | 17.9% | 25.9% | 12.8% | 21.0% |
| | Yes, it will in the future | Count | 101 | 71 | 109 | 18 | 299 |
| | | % | 27.2% | 24.0% | 29.4% | 23.1% | 26.8% |
| | Possibly | Count | 130 | 105 | 123 | 16 | 374 |
| | | % | 35.0% | 35.5% | 33.2% | 20.5% | 33.5% |
| | No | Count | 65 | 67 | 43 | 34 | 209 |
| | | % | 17.5% | 22.6% | 11.6% | 43.6% | 18.7% |
| Total | | Count | 371 | 296 | 371 | 78 | 1116 |
| | | % | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Table 2. Cross-tabulation: company market & competitive edge.

Comparing the surveyed companies on their turnover (Figure 1) reveals, perhaps unsurprisingly, that micro companies believed a data economy could create a competitive edge for their company more rarely than small and medium-sized enterprises (SMEs) or larger companies. This likely boils down to available resources, as micro companies may have fewer opportunities to collect and make use of data. The economic perspective may thus be the most relevant in this case. It may be more surprising that large companies did not believe that a data economy could create a competitive edge more often than SMEs. This is partly explained by the fact that one third of the large companies operate in B2G markets.

Whatever the challenges they are facing, the surveyed European companies mostly believed that a data economy could create a competitive edge. Even in company clusters where a smaller part thought that a data economy could create a competitive edge, a notable portion thought that a data economy has created or could create a competitive edge. It is likely that the conditions are not ideal for all companies to fully embrace a data-driven economy, and some of the companies may not see sufficient benefits from data to actually start employing it.

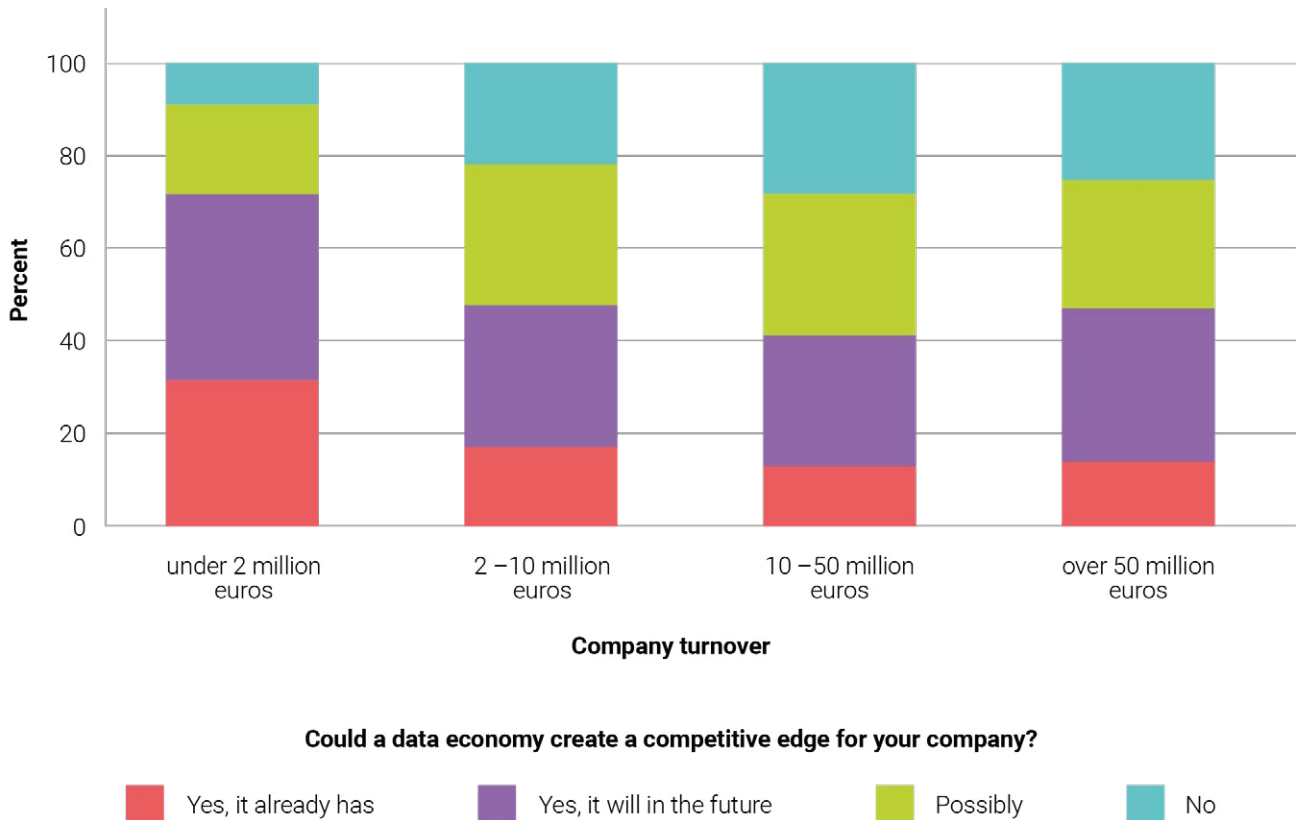


Figure 1. Company turnover and competitive edge.

Why a data economy might not be for everyone

There are many factors that may make operating in a data economy challenging for companies, regardless of the market in which they operate. Custers and Bachlechner (2017) looked into favourable conditions for data use. They recognised four critical perspectives: law, technology, society and the economy. Even though Custers and Bachlechner's focus is on big data and data reuse, these perspectives could be applied to data use generally, which is to say that it is necessary for businesses in a data economy to consider the limitations 1) imposed by law and 2) the available technology; 3) whether the use of data is ethical and widely accepted in society; 4) and whether

the use of data is economically feasible or reasonable (Custers & Bachlechner, 2017). The results from the survey largely seem to confirm the above; the respondents saw legal complexity, lack of competence in data-driven business models, customer attitudes towards data-based services and lack of technological competence as the biggest challenges. However, the respondents could only choose up to two of the biggest challenges from the options below, which meant it was unclear whether the companies deemed other societal conditions, such as social acceptance, to be suitable for their data-based business.

- | |
|--|
| 1. Complexity of the regulatory framework for businesses (28%) |
| 2. Lack of competence in data economy-related business models (25%) |
| 3. Customers do not recognise the potential of such new services (22%) |
| 4. Lack of competence in data economy-related technical capabilities (22%) |
| 5. Lack of available data, specifically from different industry sectors (17%) |
| 6. Lack of available data on the market (from sellers or as shared in ecosystems/networks) (13%) |
| 7. Low funding available in relation to required investments (13%) |
| 8. No obstacles for data-based services (15%) |

Earlier we mentioned that B2G companies are less interested in data-based business. Indeed, our data shows that while there is no big difference between B2G and other businesses in how they see the availability of data, for example, contrary to others B2G companies most often see a lack of funding being the biggest obstacle in creating new data-based business (18% of B2G versus 8% of other businesses). Unfortunately, the survey data does not reveal the reasons behind this difference. Another possible explanation for B2G companies' wariness towards data-based business is the very essence of operating in the B2G market. The Finnish welfare state system, for instance, has enabled and has largely been

built upon large-scale data collection. In this kind of welfare state framework, the purpose of the data has been to benefit the general population – and not to lead to profit for private businesses. This kind of solidarity paradox (Snell et al., 2021) may prevent B2G companies from collecting or utilising data, and hence they may have little reason to believe that a data economy would change this; this is also an important issue when trying to balance fairness in a data-based economy. Thus, we can only hypothesise that the specialities of a B2G business environment, such as competitive biddings, could explain the lack of interest.

Preparing the business model for the future

In a global world, companies are likely to face competition not just locally but also globally, and since data flows rarely are completely location-bound, a data-driven economy is a global economy. European businesses may prepare for competition in a local as well as a global data economy by making changes to their business model. The business model is a widely accepted concept by academia and industry to describe the logic of how a company creates, captures and delivers value to its customers (Wirtz et al., 2016). Typically, it consists of elements describing what kind of product or service is offered, who the customers are, how the production is organised, who the partners are and how the company generates income.

In the Sitra survey, the companies were asked if they had made any significant changes to their business model in seven different key categories (customers, channels, value proposition, activities, resources, partners, revenue models) during the last two years. The response options for each category were 'Yes, significant'; 'Yes, some'; and 'No'. For the tables, the categories have been combined to reflect whether the company had made any significant changes (at least one 'Yes, significant' answer), any changes (no 'Yes, significant' answers but at least one 'Yes, some' answer), or no changes at all (only 'No' answers) in any area of their business model.

| | | Frequency | Percentage | Valid Percentage |
|----------------|-------------------------|-----------|------------|------------------|
| Valid | No | 325 | 27.1 | 27.3 |
| | Yes, some | 449 | 37.4 | 37.7 |
| | Yes, significant | 418 | 34.8 | 35.1 |
| | Total | 1192 | 99.3 | 100.0 |
| Missing | System | 8 | 0.7 | |
| Total | | 1200 | 100.0 | |

Table 3. Has your company made significant changes in the business model?

More than 70 per cent of the companies surveyed had made at least some changes in at least one area of their business models during the last two years. There was a statistically significant correlation between having made changes in the business model and believing that a data economy could create a competitive edge, and those companies that had not made significant changes to their business models were also the least likely to believe that a data economy could create a competitive edge for them, while more than half of those companies that had made significant changes at least in one area of their business model perceived that a data economy had already created a competitive edge (33.9%), or believed that it would

in the future (37.5%) (Table 4). This could suggest that the companies that believe a data economy can create a competitive edge also make significant changes in their business models. It should be noted, however, that there are various factors that might propel companies to make changes to their business model, and striving to benefit from a data-driven economy is only one of them. Furthermore, it is unclear how quickly companies are likely to see the benefits from business model changes in a data-driven economy. Nonetheless, the data suggests that the majority of the companies are not moving towards a data economy unprepared.

| | | | Has your company made significant changes in the business model*? | | | Total |
|---|----------------------------|--------|---|-----------|------------------|-------|
| | | | No | Yes, some | Yes, significant | |
| Could data economy create a competitive edge for your company? | Yes, it already has | Count | 31 | 79 | 140 | 250 |
| | | % | 9.6% | 17.7% | 33.9% | 21.1% |
| | Yes, it will in the future | Count | 48 | 120 | 155 | 323 |
| | | % | 14.8% | 26.9% | 37.5% | 27.3% |
| | Possibly | Count | 113 | 187 | 93 | 393 |
| | | % | 34.9% | 41.9% | 22.5% | 33.2% |
| | No | Count | 132 | 60 | 25 | 217 |
| | | % | 40.7% | 13.5% | 6.1% | 18.3% |
| Total | Count | 324 | 446 | 413 | 1183 | |
| | % | 100.0% | 100.0% | 100.0% | 100.0% | |

* Customers, channels, value proposition, activities, resources, partners or revenue models.

Table 4. Cross-tabulation: Competitive edge and business model changes.

Further analysis of business model changes in the surveyed companies reveals that most often companies made changes to resources (54%) and partners (51%). What is notable is that those companies that are gaining competitive edge from a data economy have made changes to most of the business model components (the median is five out of seven components changed),

while importantly also making changes to the value proposition (65%) and customer segments (54%). All the above pinpoints to the fact that data-based business necessitates wide-scale changes in the business model of the company. The survey did not cover the companies' intentions to make changes to their business model, so further modifications may still be on the horizon.



The fair data of tomorrow

In a fair data economy, individuals, governments and businesses need to take into consideration the legal and technological limitations in addition to societal and economic expectations related to data usage. These on the one hand may narrow the possibilities of data use, while on the other they help ensure trust and fairness. They set up the framework in which it is possible to operate.

Based on the 2021 Sitra survey, European companies are prepared for the data-driven economy of today and most importantly that of the future. Some are better-prepared than others – and perhaps there is still a need for businesses that do not deal with data. The survey provides evidence of the positive correlation between following fair data principles and the introduction of data-based business (competitive edge question), so it seems that businesses do not see fairness as an obstacle to succeeding in a data economy. In fact, the majority of the surveyed companies regarded that they have already taken the following objectives of fair data use into practice (Ulander et al., 2021, 40–41):

1. We offer our customers easy tools to access and manage their personal and/or business data. [EASY ACCESS]
2. The data we gather from consumers is available for them to use in other services outside our company. [PORTABILITY / ACCESSIBILITY]
3. We create value from data, not just for our operations, but also for society, people and the environment. [SOCIAL BENEFITS]
4. We have defined ethical rules for our organisation for using, collecting and sharing data. [ETHICAL CODE OF CONDUCT]
5. We strive to create trust by acting and behaving transparently. [TRANSPARENCY]
6. Our digital services are designed to respect privacy. [PRIVACY]
7. Our digital services are designed to respect control over personal and business data. [DATA SOVEREIGNTY]
8. Our company's consideration of the rights of individuals and/or organisations exceeds statutory requirements. [CONSIDERATION OF RIGHTS]
9. Involving customers and individuals in designing our services is our design principle. [CO-DESIGN]
10. We understand our data repositories and assets. [UNDERSTANDING OUR ASSETS]
11. We communicate about the use of data in our corporate social responsibility reporting (CSR).

There were some differences based on the markets the companies operated in, as well as on their turnover, but Europe – or at least the surveyed countries of Finland, France, Germany and the Netherlands – seems to be mostly well-prepared for the future data economy. One of the most encouraging findings is that a great proportion of the surveyed companies thought that a data economy could possibly create competitive edge for the company, which suggests that there will be vibrant competition in both European and global data economy markets, provided that the companies are willing to take their chances. However, legal, technical, societal and economic conditions must be met in order to successfully gain from a data-driven economy. This will ensure that citizens, businesses and governments all benefit from a fair European data economy.

Background information about the insight

This insight review was carried out by researchers from the Centre for Collaborative Research CCR, Turku School of Economics at the University of Turku, Finland. The data utilized is from Sitra's IHAN project, the impacts of which are being studied at CCR.

A 2021 survey commissioned by Sitra aimed at gaining knowledge on companies' awareness, attitudes and commitment to business potential enabled by a fair data economy. The data was collected by Innolink as part of Sitra's IHAN project. The purpose of the IHAN project was to promote a fair data economy in Finland and in Europe by engaging companies, providing information to decision-makers and helping people understand their data use online.

The companies surveyed represent four European countries: Finland, France, Germany and the Netherlands. The survey was targeted at decision-making roles such as chief data officer, business development management and information management. A total of 1200 responses were collected. For further information on how the survey was conducted and country-specific analyses, see Ulander et al., 2021.

Marikka Heikkilä works as Research Director and Aino Saaristo as project researcher at the Centre for Collaborative Research CCR.

The data is available for download here:

www.sitra.fi/en/publications/the-future-of-european-companies-in-data-economy-2021/

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For more information and downloads

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In English » www.utu.fi/en/university/turku-school-of-economics/ccr/ccr-insights

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