REGULATION OF ARTIFICIAL INTELLIGENCE IN THE EU

A Public Choice Analysis

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Abstract:
Artificial Intelligence technology is very much present in society today but is still in its infancy in terms of its potential and development. This also applies to the development of policy and regulatory frameworks governing it. As AI systems become more autonomous, issues of safety, transparency, accountability, job losses, discrimination biases, malevolent uses and poor decision-making become more pressing, and generate a demand for frameworks that deal with those issues (Delponte & Centre for Industrial Studies, 2018). The race to establish a leading framework for global AI governance and set the new tone for geopolitics has led the European Commission to take the first steps into a definitive policy direction. This paper conducts a political economy analysis on an aspect of the EU's current process of development for a regulatory framework for Artificial Intelligence. Specifically, the research is focussed on a certain aspect of the development process: The High-Level Expert Group on Artificial Intelligence (HLEG on AI), set up by the European Commission, which is actively and openly involved in the development of the policy and regulatory framework for AI. This paper takes the established theories of public choice, the study of government using economic tools, and applies them to a new type of subject: High-Level Expert Groups.

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Introduction

The safe and ethical use of Artificial Intelligence (AI) is a global challenge and there is still a significant policy and regulatory gap to fill in this respect (Delponte & Centre for Industrial Studies, 2018). The European Commission has published its initiatives regarding AI, and it has been made clear that the intent is to increase the usage of AI in many critical aspects of the EU's functioning to "achieve useful tasks, increase efficiency and flexibility, and to ensure intuitive interaction and cooperation" (Huet, 2017, p.3).

Amongst the benefits for the EU's economy, AI is described as being essential for productivity and competitiveness, with a massive growth potential in service markets. For EU citizens AI has been outlined as essential for addressing societal changes in health, an ageing population, environmental changes and security measures (Huet, 2017). The legal and societal issues include safety when it comes to smart, collaborative robots, liability challenges posed by a notably increased amount of autonomy, data protection & ownership issues, and the employment effects on the economy and the impact on the workforce (Huet, 2017). Regulation can be beneficial in addressing the challenges from an economic and social perspective, however, there are those that argue that regulation can greatly hinder progress and reduce competitiveness in this field (Delcker,2018).

Nevertheless, the EU is currently in the early stages of developing policy and regulatory frameworks for Trustworthy AI. This paper will not focus on the social justifications for the development of an AI regulatory framework nor will it look at the economic justifications for regulation. This paper will conduct a political economy analysis on an aspect of the EU's current process of development for a regulatory framework for Artificial Intelligence. Specifically, the research is focussed on a certain aspect of the development process: The High-Level Expert Group on Artificial Intelligence (HLEG on AI), set up by the European Commission, which is actively and openly involved in the development of the policy and regulatory framework for AI in the EU through its recommendations and guidelines. The HLEG was set up in June 2018 and has, at the point of writing of this paper, published two key documents: *Ethical Guidelines for Trustworthy AI* (HLEG on AI, 2019a) and *Policy and Investment Recommendations for Trustworthy AI* (HLEG on AI, 2019b). Since the group was

established by the Commission with the intention that it would "support the implementation of the European Strategy on AI, which includes the elaboration of recommendations on future-related policy development and on ethical, and societal issues related to AI" (Commission,2018b), it can be inferred that it will have significant influence regarding the issues it has been tasked to advise on.

Public choice theorists look at private interest explanations for regulation. The aim of this paper is to analyse the composition of the HLEG on AI and to identify the interest groups represented in the group, in order to analyse whether interest groups have managed to position themselves to have strong influence in the regulatory and policy development process so far and in the future. In order to answer this research question, these sub-questions, amongst others, will be used for guidance:(i) Who is the group composed of and how were they selected? (ii) What advice is being given? (iii) Does the analysis indicate that there has been successful lobbying, and swaying of direction, in the development of the ethics guidelines that were published along with the policy recommendations submitted to the European Commission?

The hypothesis presented is that the development process is industry biased and that industry is therefore in the position to have the most evident influence in the HLEG on AI, as opposed to actors representing independent interests or associations that represent other interests such as those of consumers. This follows Stigler's (1971) argument that most regulation is really built by industry via interest groups that engage in regulatory capture. If proven to be true, the hypothesis would mean that the HLEG on AI is a pathway for regulatory capture, with industry interest groups being in a dominant position to steer part of the development process that will ultimately lead to a policy and regulatory framework on AI, by influencing the stance of the HLEG in its publications. The aim of this paper is to conduct a public choice analysis that maps the different interests represented within the HLEG and analyse which interest groups, if any, have managed to position themselves to have the most influence in the process so far, in order to ultimately reject or confirm the hypothesis presented.

Before the analysis is made, this paper will go through several steps. The first chapter will discuss Artificial Intelligence and the contextual background for regulation. The chapter will look at the nature and problems of Artificial Intelligence.

It will be discussed what AI is, along with the arguments that are being used to regulate this fields. Specifically, the supposed threats of AI and the regulatory needs following on from those threats will be examined. The analysis will include why ethics is so relevant to AI.

In the second chapter the theoretical framework will be presented. It will discuss the theory of political economy and the public choice model as presented in academic literature. The proposed method of analysis and methodology of public choice will be laid out and tailored to the specific question of AI. An analysis will be presented on what public choice theory has to offer on this subject and why it is of importance in this field.

The third chapter will focus on the High-Level Expert Group on AI – the subject of the public choice analysis. Data will be observed and collected. The HLEG will be mapped, and it will be identified who the members are and who they represent. Specifically, the sub-groups within the groups they represent will be of interest. Then the public choice model will be applied to the data. From this deductions will be made to ascertain who is most likely driving the regulatory stances to best align with their interests within the group, along with the direction they may want to sway the development of the policy and regulatory framework in order to maximise their utility and favour the interests they represent.

Chapter four will also focus on data analysis and will cross-reference the results from the prior analysis with the contents of the *Guidelines for Trustworthy AI* document, along with the *Policy and Investment Recommendations for Trustworthy AI* document that was published by the HLEG on AI and submitted to the European Commission as recommendation. The results of this will be mapped to see whether there is evidence of particular publications favouring certain stances that favour certain interest groups.

This leads on to the limitations of the paper and further research that could be done before conclusions are presented and summarised.

Chapter 1: Robots living amongst us?

1.1 The future is now.

Artificial Intelligence, or AI, has become somewhat of a buzzword, and now it has managed to make its way to the forefront of regulatory and policy talks. It often evokes futuristic imagery in the varying contexts it is brought up, despite the fact that it is already very much part of our everyday lives. AI is influencing the way we work, how we spend our free time and generally how we navigate our day-to-day activities. AI has given us predictive and suggestive searches, self-driving cars and voice-activated assistants. AI algorithms have given online streaming services the ability to pretty accurately predict what films someone may like based on previous choices and reactions (Adams, 2017). Artificial Intelligence allows emergency services to diagnose health conditions on the phone based on the sound of a caller's voice (European Commission, 2018). It is helping radiologists to detect tumours more accurately by instantly comparing x-rays with a large amount of medical data. AI is even being used to monitor and regulate the movement, temperature and feed consumption of farm animals on farms throughout Europe (European Commission, 2018).

Some liken AI's impact on contemporary society to that of the discovery of electricity in the past. One thing that cannot be denied, is that it has proven itself to be a "general-purpose technology" with wide-reaching effects and even more potential (Delponte & Centre for Industrial Studies, 2018). Some believe that the continued development of AI will lead to 'machines taking over'. Literature and film have long toyed with the idea of technology enabling machines to develop human-like consciousness, rendering humans themselves obsolete – but these fears are also being translated into public perception of AI. 72% of respondents in a survey by the Robotic & Artificial Intelligence Unit of the European Commission's Directorate-General for Communication Networks, Content & Technology, thought robots steal people's jobs (Huet, 2017). However, Artificial Intelligence is still in its infancy, and in most cases does not actually refer to machines that have developed sentience or the ability to think with awareness like human beings. There is nothing in current developments that suggests that it is heading that way in the near future (Renda, 2019a).

Nevertheless, as AI systems become more autonomous, issues of safety, transparency, accountability, job losses, discrimination biases, malevolent uses and

poor decision-making become more pressing, and generate a demand for frameworks that deal with those issues (Delponte & Centre for Industrial Studies, 2018). In order to develop such frameworks, the nature of what they are trying to navigate needs to be understood. It has been outlined what AI plays a role in, however, what exactly is AI?

1.2. AI: A quick definition.

Cognitive computing systems mimic the human brain in terms of reasoning with purpose and learning at large scale. They do this using self-teaching/self-learning algorithms (Sommer, 2017). Artificial Intelligence is a form of cognitive computing. Experts define AI as "systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals" (European Commission,2018a,p.1).

Adapted from Peter Sommer, 2017
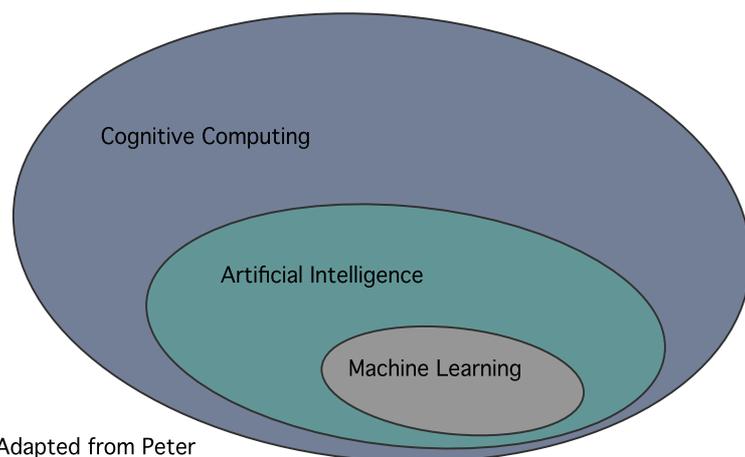
Figure 1

AI can manifest itself in varying forms. It can be purely software-based, or it can be embedded in hardware devices (European Commission, 2018a). Examples of software-based AI are facial recognition systems or voice-activated personal assistants. Drones and driverless cars are examples of where AI has been embedded into hardware devices.

Many AI technologies require data to improve their performance. Machine Learning algorithms "learn from data and create foresights based on this data" (Sommer, 2017). Once AI systems perform well, they can be used to improve and

automate decision-making in the same domain. For example, cyberattacks on a network can be spotted and prevented by an AI system using data from the relevant network (European Commission, 2018).

1.3. Global AI and the EU

As previously outlined, AI technology is very much present in society today, but is still in its infancy in terms of development. There is huge potential for growth in many sectors. Part of the appeal of AI for World Powers such as the EU is the ability to unlock economic growth potential, transform the global economy, shape the way they do business, and establish dominance in different sectors – AI is one of the most "strategic technologies" of our time (European Commission, 2018a, p.1). AI breakthroughs that lead to competitive advantage are highly sought after. One of the major upcoming breakthroughs will be the moment when quantum computers reach human brain capacity and then begin to surpass it (Renda,2019). This is expected to be realised as early as 2025. Whichever World Power reaches this goal first will influence the geopolitical sphere and reap major advantages in areas such as cyberwarfare (Renda, 2019). Ergo, the global AI competition is indicative of the global struggle for power. Putin declared "whoever becomes the leader in this sphere will become ruler of the world" (Maggio,2017). China has also outlined its ambitions of becoming the world's leader in Artificial Intelligence innovation by 2030 (Fischer, 2018).   So, it comes as no surprise that European leaders have also signalled AI to be a policy priority. There were, and still are, concerns that Europe is lagging behind the US and China when it comes to AI usage and development. As a result, the European Council requested for the European Commission to develop a 'European approach to AI' in 2017. Following on from this, in April 2018, the European Commission outlined the European approach to AI in its Communication to the other EU institutions, titled *Artificial Intelligence for Europe*. In the same month the leaders of 24 EU Member States, along with Norway, specifically committed to working together on AI and signed a declaration in a bid to compete with tech giants from the USA and China. Part of the European approach to AI includes launching initiatives that aim to:

> Boost the EU's technological and industrial capacity and AI uptake across the economy, both by the private and public sectors. This includes investments in research and innovation and better access to data.

Prepare for socio-economic changes brought about by AI by encouraging the modernisation of education and training systems, nurturing talent, anticipating changes in the labour market, supporting labour market transitions and adaptation of social protection systems.

Ensure an appropriate ethical and legal framework, based on the Union's values and in line with the Charter of Fundamental Rights of the EU. This includes forthcoming guidance on existing product liability rules, a detailed analysis of emerging challenges, and cooperation with stakeholders, through a European AI Alliance, for the development of AI ethics guidelines. (European Commission, 2018a, p.3)

The European Commission has outlined that these initiatives and its AI efforts are to lead to end results that are "good and for all" (European Commission, 2018a, p.2). However, simply aiming for those goals will not necessarily translate into those desired results. Experts and academics have voiced their doubts regarding the EU's ability to set rules that will lead to Europe becoming a competitive player in the AI field (Renda, 2019a). The Commission itself has acknowledged that an appropriate ethical and legal framework is necessary if these goals are to be realised. This framework is to be based on the values set out in the Treaty on European Union (TEU) in conjunction with the EU Charter of Fundamental Rights. The regulatory framework that currently exists is to be built on to set a global standard for a sustainable approach to AI technology. Currently, there is not yet a leader when it comes to AI global governance; a leadership gap exists that the US and China are likely unwilling to deal with, and that the EU could fill if it were to work collectively (Renda,2019a). The European Union has the strength to do so and could become a leading figure in a new global governance setting, where until now technical standards are being shaped through, "voluntary, multi-stakeholder, transnational private regulation" (Renda, 2019a, p.42).

1.4. Risky business: the push to regulate

With vast potential comes a lot of risk, this combined with the imperfect nature of markets leaves a lot of room for negative social welfare effects, abuse and malfunction. AI has the potential to transform the global economy and create society-shifting waves. The transformative potential is large and as a result the potential threat is also large. We live in a time of an unprecedented amount of data, and with

such a large scale of data comes an unprecedented demand for things that can process that data. The drive behind AI is partially down to a need to process all the data available to us, as a result AI can be seen as a function of all the other technological developments. The more we delegate the function of processing information to external actors (AI) the more the need for 'trustworthiness' becomes necessary (Renda, 2019).

The challenges are ethical, societal and legal in nature; a question often asked is: around which values do we want society to be organised around and what role should technology play in it? (PricewaterhouseCooper, 2019). Many issues arise. Algorithms making automated decisions have the potential to make decisions that do not align with our values. One economic justification for regulatory intervention is information asymmetry, something there is a lot of in the world of AI. With the huge amounts of data at play, there is immense potential for abuse of said data – how can customers trust that organisations will handle their data appropriately? (PricewaterhouseCooper, 2019). The inexplicability or opaque nature of certain aspects of AI also creates issues. AI is now able to accomplish things that were unforeseen, this makes biases more difficult to detect. Notably increased automation also creates issues regarding liability – who is responsible if something goes wrong if an automated machine that uses deep learning does something unforeseen? These are just a fraction of the AI challenges that call for global governance. This also something the EU has recognised. As previously outlined, the insurance of an appropriate ethical and legal framework is one of the three pillars of the EU's AI initiative (European Commission, 2018a). Safety, security and prevention of harm requires moral responsibility, governance, regulation, design, transparency, development, inspection, monitoring, testing and certification (European Group on Ethics in Science and New Technologies, 2018).

1.5. AI Progress in the EU

Although in the early stages of developing an EU AI policy and regulatory framework, a lot has been set in motion by the EU institutions. A key aspect of the European AI Alliance is the Digital Single Market strategy to create further digital opportunities for businesses and people in Europe. An EU Cybersecurity Agency has been established, a Digital Europe programme has been launched to increase AI investments, and

widely accessible algorithms databases have been created (Future for Life Institute, 2018). In all of these initiatives the EU's focus on 'trustworthy' AI has been clear. The aspect of 'trustworthiness' interlocks ethics into the policy and regulatory development. The Joint Declaration on the EU's legislative priorities for 2018/19 made this clear by making data protection, digital rights, and ethical standards in AI and robotics a priority. The goal is to ensure "a high level of data protection, digital rights and ethical standards while capturing the benefits and avoiding the risks of developments in artificial intelligence and robotics" (Tajani, Ratas & Juncker, 2017, p.1). A visible example of legislation that has come out of this is the General Data Protection Regulation (GDPR) that came into effect in May 2018. It built on prior EU data protection law and implicates AI in several ways.

Another notable step was the creation of the HLEG on AI by the European Commission. It was created in June 2018 and since then has been actively and openly involved in the development of the policy and regulatory framework for AI in the EU. It has done this through its recommendations and guidelines. Since the HLEG was created by the Commission with the intention that it would "support the implementation of the European Strategy on AI, which includes the elaboration of recommendations on future-related policy development and on ethical, and societal issues related to AI" (European Commission, 2018b), it can be inferred that it will have influence regarding the issues it has been tasked to advise on. The key issue when it comes to regulating AI and developing policy is the information asymmetry. Regulators lack the knowledge and expertise that industry has – which makes the regulatory process susceptible to being captured by industry. The information asymmetry is what drove the Commission to create the HLEG to advise it in the development process. This is the focus of the paper's analysis. Rather than look at all aspects of the development of the policy and regulatory frameworks for AI, a focussed analysis will be done of this small but significant component of the process – the HLEG. The next chapter will outline the theoretical framework for the method of analysis.

Chapter 2: Theoretical Framework

In the previous chapter contextual information was given on Artificial Intelligence in the EU. This was done to illustrate why the nature of how the regulation of AI is handled is of critical importance regardless of the justifications used to push for governance. Particularly the information asymmetry between industry and regulator and AI's wide-reaching effects warrant close attention to the policy development process. This is the reason this paper is conducting an economic analysis on an aspect of the process leading to the development of policy and regulatory frameworks for AI in the EU. However, now the essence of the analytical tool being used, public choice theory, will be laid out in preparation for the combination of the subject of study and the method of analysis; the public choice analysis of the High-Level Expert Group on AI.

2.1 Public Choice in a nutshell

In 1966 James M. Buchanan signalled important interdependencies between economics, law and political science for a new political economy (Rowley, 1989). Since then the identifiable subdiscipline of public choice has become a staple element within the law and economics field. Public choice as a discipline gained recognition in the 1960s, but its history is similar to that of welfare economics and public finance (McNutt, 2002). By the 1950s government intervention in the economy had been generally accepted. The awareness of externalities and observations of the market's failure to reach efficiency secured the role of government as an instrument in public policy (McNutt, 2002).

Public choice can be defined as the "economic study of non-market decision-making, or simply the application of economics to political science" (Mueller, 1976, p.1). Contemporary public choice analysis has also been described as "a study of mechanisms and institutions which circumscribe government and individual behaviour" (McNutt, 2002, p.1). In a nutshell it is the study of government using economic tools. Government decision-makers are treated like private decision-makers; they are treated as rationally self-interested actors. Public choice theorists assume that government officials maximise their own utility – their individual interests, not the 'public interest'. However, government officials and private

decision-makers face different constraints, as a result they show differences in behaviour. (Ekelund, Ressler and Tollison, 2006).

The 'fathers of public choice theory' include James Buchanan and Gordon Tullock, who published the book *The Calculus of Consent: Logical Foundations of Constitutional Democracy* (1962). This is a critically important piece of public choice literature; the book conducts a positive analysis of the development of constitutional democracy. Mancur Olson also made highly noteworthy contributions to the field and published his most notable paper *Logic of Collective Action: Public Goods and the Theory of Group* in 1965. This introduced the collective action problem – a central element in the public choice school. The collective action problem addresses that it is difficult for a group to provide a public good due to the nature of individual costs but shared benefits. This leads to the costs outweighing the benefits for an individual and there being a lack of incentive to participate and more incentive to free-ride (Olson, 1962). Gaining favourable legislation is a public good. This makes it rational for voters to be disinterested in strong engagement in lobbying, leaving the avenue open for smaller concentrated interest groups. Other members of the 'fathers of public choice' category include Kenneth Arrow, Duncan Black, Anthony Downs, William Niskanen and William Riker.

Duncan Black wrote several papers on political choices and voting theory, amongst these was *The Theory of Committees and Elections* (1958). His works were precursors for other prominent public choice theorists. Black's work helped to develop the median voter theory, which outlines that in a majority rule voting system the outcome most preferred by the median voter will win– as a result political parties pander to the median voter. The development of the theory was influenced by Kenneth Arrow's *Social Choice and Individual Values* (1951) in which he showed the results of his study of social choice and the voting paradox. Another influential piece was Anthony Downs work *An Economic Theory of Democracy* (1957) which considered the voting paradox and outlined how voter distribution could be depicted using a curve (normal distribution curve). William Niskanen introduced the budget-maximising model of bureaucrats in *Bureaucracy and Representative Government* (1971) – the idea that bureaucrats, acting in their rational self-interest, will seek to increase their own power by increasing their budget. William Riker also conducted

notable work on voting and decision-making process in politics, particularly how democratic leaders could manipulate decision-making process by creating coalitions. His notable works include *The Theory of Political Coalitions* (1962) and *Liberalism against Populism* (1982).

There are many sub-fields of study which are connected and fall under the umbrella of public choice. Public choice theory incorporates other fields such as game theory and social choice theory (Sokol, 2011). Public choice includes the analysis of democratic governments and how they act through institutional arrangements (Ekelund, Ressler & Tollison, 2006). Economic tools are applied to majority voting, representative democracy, political parties, bureaucracies and special interest groups. Positive public choice theory seeks to explain actual political behaviour and normative public choice theory determines the desirability of certain political institutions (Ekelund, Ressler & Tollison, 2006). At the heart of these analyses is the fundamental premise of public choice: the idea of rationally self-interested actors maximising their utility.

2.2 Interest Groups and regulation

The area of specific interest in this paper is interest group theory combined with capture theory of regulation. The economic theory of regulation seeks to "explain who will receive the benefits of regulation, what form regulation will take, and the effects of regulation upon the allocation of resources" (Stigler,1971, p.1). The state and politicians in the legislature who enact laws and introduce policies are seen as a "potential resource or threat to every industry in society" (Stigler, 1971, p.1). A lot of resources are at the state's disposal, which can be used to selectively hurt or boost industries. Economic groups, such as industries and occupations, want public resources and powers to be used to improve their economic status (Stigler, 1971). This creates a demand for regulation. There are certain characteristics in the political process (which can be explained by the rational self-interest of actors) which allow such groups to obtain favourable regulation, thereby creating the supply of regulation. George J. Stigler outlined this and presented empirical evidence to illustrate this in *The theory of Economic Regulation* (1971). The pursuit for artificially

contrived profits through regulatory capture can be described by the term 'rent-seeking' (Tullock, 1967) (Krueger, 1974).

The collective action problem that plagues voters means that the citizens who often elect these actors within the state are not engaged enough to be the direct beneficiaries of regulation and legislation (Olson,1965). Policy proposals that are popular with the public or would yield the most satisfaction from the public may not gain traction in the legislature if they work against the interests of the groups that have the best political connections (Holcombe, 2016). Private interests dominate the regulatory process. Private interest theory and the theory of regulation both have their foundation in the assumption that the individuals in government make their choices based on their individual self-interests and the constraints they face – not for the 'public good'. As Buchanan once remarked, public choice is politics without romance (Buchanan, 2003). Private Interest Group Theory assumes that special interest groups lobby the state to secure legislation that protects their own economic interest (Stigler, 1971). Interest groups can offer legislators clout and the political support of their members, along with financial campaign contributions and other benefits (Holcombe, 2016). Regulation therefore becomes a good that is governed by the laws of supply and demand and the legislature plays the role of political marketplace (Stigler,1971). The demands of different interest groups are in competition with one another and are weighed against each other to yield public policy (Holcombe, 2016). The interest group that values the regulation, rule or standard the most will lobby most strongly and secure it in their favour.

2.3 Methodology
2.3.1 Significance of public choice
Public choice theory is important as it adds a vital element to public policy analysis. Public policy analysis often ends with the outline of policies that are optimal according to theory – it often does not consider whether real-world government would actually implement those optimal policies or even have the ability to implement them. Public choice adds the real-world perspective: it analyses the way political decision-making actually works rather than how it may work in theory (Holcombe, 2016). Public choice serves to enrich the analytical framework of law and legal institutions.

2.3.2. Relevance of public choice for this particular analysis

The aim of this paper is to analyse the composition of the High-Level Expert Group on AI and to identify the interest groups represented in the group, in order to analyse whether they have managed to put themselves into a position to have dominant influence in the process so far. The hypothesis presented is that the development process is industry biased and that industry is therefore in the position to have the most evident influence in the HLEG on AI, as opposed to actors representing independent interests or associations that represent other interests such as those of consumers. Public choice was chosen for the purpose of answering this research question and testing the hypothesis.

Capture theory is particularly relevant for the analysis of the HLEG on AI as it stipulates that regulatory agencies are 'captured' by the organisations and firms they are regulating (Stigler,1971). This results in them acting in the best interest of the firms they regulate rather than the general public interest. This is particular poignant in the case of the HLEG on AI and the European Commission because it is not a simple case of a specific group lobbying the Commission for legislation. The HLEG on AI was created by the Commission to advise it on regulation and policy steps in the area that it lacks sufficient information on to regulate adequately on its own. The key question is whether this advisory body, which has had a significant amount of responsibility placed on it in terms of shaping future policy and regulation, has been infiltrated by the industry to an extent that it is actually a form of 'capture' by the industry of the European Commission. If players in the AI industry are heavily influencing the HLEG on AI to produce recommendations and guidelines which the European Commission will build on, this may ultimately lead to a policy and regulatory framework that benefits industry in a biased manner. The key issue with is that this may actually go against what is in the best interest of the public and lead to inefficient welfare loss. As a result, the rationale for choosing public choice as a method of analysis was its well-suited nature for analysis looking at interest-driven regulation.

2.4. Outline of first stage of analysis

The next chapter will begin the analysis on the HLEG on AI. The research observations will be presented. The HLEG will be mapped, and it will be identified who the active

members are and who they represent. Specifically, the sub-groups within the group of interest. Throughout the mapping, the public choice model will be applied, and assumptions will be made based on the data to identify the interests being advanced. From this further deduction will be made to ascertain which regulatory stances best align with the composition of interests, along with the direction they may want to sway the development of the policy and regulatory framework in order to maximise their utility and favour the interests they represent.

Chapter 3: The High-Level Expert Group on AI

3.1. The HLEG explained

In applying the public choice model of analysis, the subject of interest has to be mapped, interests must be identified, and research data has to be presented. The following section will do so. All information will be explained thoroughly and clearly so that the same results can be reproduced if need be.

Name	HLEG on AI (E03591)
Policy Area	Research and Innovation
Lead Directorate-General	CNECT - DG Communications Networks, Content and Technology
Type of HLEG	Informal, Temporary
Scope	Broad
Mission	The general objective of the group shall be to support the implementation of the European initiative on AI. This will include the elaboration of recommendations on future AI-related policy development and on ethical, legal and societal issues related to AI, including socio-economic challenges. The Commission aims at building a broad stakeholder engagement framework, the European AI Alliance, to allow for broad and open discussion of all aspects of AI development and its impact on the economy and society. In addition to the group, the AI Alliance will consist of stakeholders who voluntarily sign up to participate through an online platform. The group shall steer the AI Alliance's work, interact with other initiatives and help stimulate a multi-stakeholder dialogue, gather participants' views and reflect them in its analysis and reports.
Task	1. Advise the Commission on next steps addressing AI-related mid to long-term challenges and opportunities through recommendations which will feed into the policy development process, the legislative evaluation process and the development of a next-generation digital strategy.
	2. Support the Commission on further engagement and outreach mechanisms to interact with a broader set of stakeholders in the context of the AI Alliance, share information and gather their input on the group's and the Commission's work.
	3. Propose to the Commission AI ethics guidelines, covering issues such as fairness, safety, transparency, the future of work, democracy and more broadly the impact on the application of the Charter of Fundamental Rights, including privacy and personal data protection, dignity, consumer protection and non-discrimination. These guidelines will build on the work of the European Group on Ethics in Science and New Technologies and of the EU Fundamental Rights Agency in this area.
	Assist the Commission in the preparation of legislative proposals and policy initiatives & Other

The information contained in the table can be found in the European Commission's Register of Expert Groups (European Union, 2018).

The European Commission has outlined that despite its considerable in-house expertise, it requires specialist advice from outside experts as a foundation for sound policy-making. As a result, it creates consultative bodies, or High-Level Expert Groups (European Union, 2016). These groups are supposed to be comprised of a wide spectrum of stakeholders whose expertise are supposed to aid the Commission in its policy tasks. The expert groups are subject to horizontal rules that can be found in Commission Decision of 30.05.2016 (European Commission, 2016).

There are two variations when it comes to Commission expert groups. Type 1 is a formal expert group set up by a Commission Decision. Type 2 is an informal expert group. These are set up by an individual Commission department that has obtained the agreement of the Commissioner and Vice-President responsible and of the Secretariat-General (European Commission, 2016) The differences between the groups are procedural steps and rules that govern them, which are published (European Commission, 2016).

The HLEG on AI was created under the policy area of Research and Innovation, as a result it has 'informal status'. An important aspect is that it is temporary in nature – this will be touched upon again during analysis. There was an open selection process which began with a call for applications from the 9th March 2018 to the 9th of April 2018. The open selection process means that members of the HLEG on AI are there voluntarily and sought-out to be members. An important thing to note is that the members of the HLEG on AI are not being remunerated for the services they offer in participation of the group. There is the opportunity to have travel and subsistence expenses reimbursed by the Commission under certain circumstances (Commission's Directorate-General for Communications Networks, Content and Technology, 2018). However, aside from this there is no direct monetary incentive for participation in the group. The incentives for membership will also be looked at in the mapping stage of the public choice analysis.

In addition to being tasked with producing publications, guidelines and recommendations to aid the Commission with its AI policy and regulatory framework development process, the HLEG on AI is also the steering group for the European AI

alliance (European Commission, 2018b). This is a multi-stakeholder forum where all aspects of AI usage, developments and impact on society and the EU economy are discussed. The HLEG on AI has at the point of writing helped to stimulate discussions and through this has gathered the various stake holders' views. This combined with other important input helped to the development process of the two publications put out by the HLEG on AI so far. Through its participation the HLEG on AI is forging pathways for policy-making (European Commission, 2018b).

3.2. HLEG composition and mapping

Research shows that there are currently 51 active members in the HLEG on AI. Earlier press releases stated 52 members, however the expert group database lists 51. These members – representatives from industry, academia and civil society, are in the group acting in different capacities.

>2. Expert groups may be composed of the following types of members:
>
>(a) individuals appointed in their personal capacity who are to act independently and in the public interest ('Type A members');
>
>(b) individuals appointed to represent a common interest shared by stakeholders in a particular policy area, who do not represent an individual stakeholder, but a policy orientation common to different stakeholder organisations ('Type B members'). Where appropriate, those individuals may be appointed on the basis of proposals put forward by the stakeholders concerned;
>
> (c) organisations in the broad sense of the word, including companies, associations, Non-Governmental Organisations, trade unions, universities, research institutes, law firms and consultancies ('Type C members');
>
>(d) Member States' authorities, at national, regional or local level ('Type D members');
>
>(e) other public entities, such as third countries' authorities, including candidate countries' authorities, Union bodies, offices or agencies and international organisations ('Type E members'). (European Commission, 2016, Article 7)

Out of the HLEG on AI's current 51 members 17 of them are Type A Members, 2 are Type B, 30 are Type C and 2 are Type E.

Type A members, who are appointed in a personal capacity, are required to act independently and in the public interest according to the composition features specified (Commission's Directorate-General for Communications Networks, Content

and Technology, 2018). Type B members appointed to represent a common interest are forbidden from representing an individual stakeholder. They are called to "represent a policy orientation common to different stakeholder organisations" (Commission's Directorate-General for Communications Networks, Content and Technology, 2018, p.3). Type C and E members, organisations and other public entities are responsible for "ensuring that their representatives provide a high level of expertise" (Commission's Directorate-General for Communications Networks, Content and Technology, 2018, p.3).
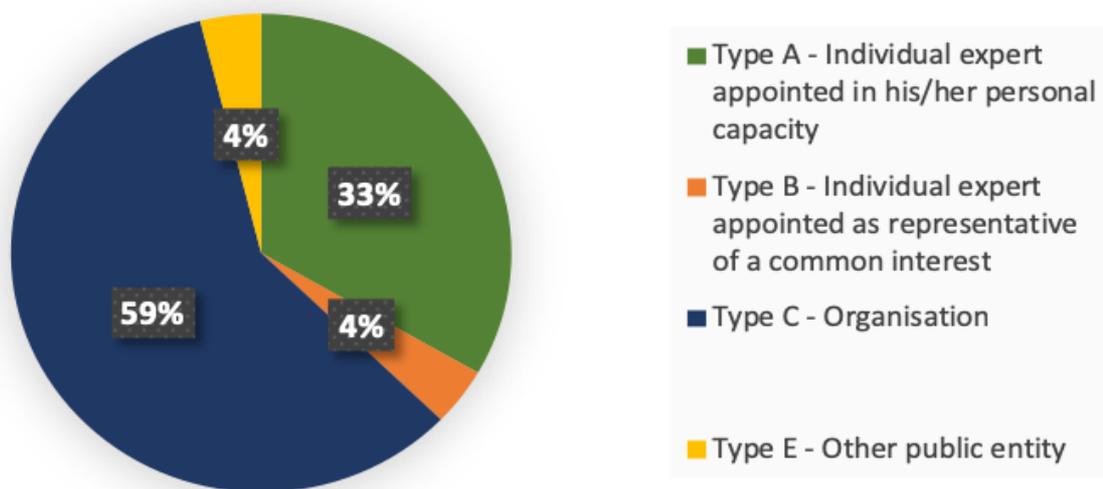
Figure 2

It should be noted that the requirement to act in the public interest is only stated for Type A members. There is also another aspect to be noted that was presumably changed during the selection process: the composition section in the call for applications documents states that the group would consist of up to 30 members. However, the group currently has 51 active members listed – this will be visited again later on in the paper. The specifications also outlined that the group was to operate in a balanced manner with simple majority voting rule being the main decision-making tool:

The group will analyse, synthesise and reflect in a faithful and balanced manner the broader input received. (Commission's Directorate-General for Communications Networks, Content and Technology, 2018, p.4).

The group shall adopt its opinions, recommendations or reports by consensus[1]. In the event of a vote, the outcome of the vote shall be decided by simple majority of the members. The members that voted against or abstained shall have the right to have a document summarising the reasons for their position annexed to the opinions, recommendations or reports. (Commission's Directorate-General for Communications Networks, Content and Technology, 2018, p.5).

In agreement with DG CNECT, the group may, by simple majority of its members, decide that deliberations shall be public. Participants in the activities of the group and sub-groups shall not be remunerated for the services they offer. Travel and subsistence expenses incurred by participants in the activities of the group and sub-groups shall be reimbursed by the Commission. Reimbursement shall be made in accordance with the provisions in force within the Commission and within the limits of the available appropriations allocated to the Commission departments under the annual procedure for the allocation of resources. The members of the group and their representatives, as well as invited experts and observers, are subject to the obligation of professional secrecy (Commission's Directorate-General for Communications Networks, Content and Technology, 2018, p.5).

However, the balance of voting is already influenced by the composition of the group as a whole. A large majority, 59%, is composed of organisations and groups (Type C). Many of these organisations are registered within the European Union's Transparency Register as in-house lobbyists and trade/business/professional associations. The Commission itself is aware that these organisations are lobbying and acting based on specific interests – acting as interest groups. Since Type C has large majority it is important to look at these organisations specifically to determine if there are common interests and how much of the members are from the industry. One thing to note is that all interest groups seek to influence government policy to benefit themselves or their causes. Interest groups lobby in the interest of their causes but these causes may also align with the public good – an example of this is

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[1] The mention of 'consensus" appears to be purely symbolic as consensus implies unanimity, yet the voting norm in place is one of simple majority.

associations that represent consumer interests. The key issue is whether interest groups lobbying in favour of industry are most dominant within the HLEG on AI.

3.3 Member Type C: Organisations

Originally, the HLEG was intended to have no more than 30 members according to the earlier published documents (Commission's Directorate-General for Communications Networks, Content and Technology, 2018). However, now 30 members, out of 51, are from the 'Type C Organisation' category alone. Within this group there is a distinct trend of types of organisations represented. With 43.3% the largest faction within this member type is categorised as *Companies/Groups*. All of these are registered within the European Union's Transparency Register as category II: in-house lobbyists and trade/business/professional associations and have a history of lobbying. This is followed by *Trade and Business Associations* with 16.7%. *Academia, Research and Think Tanks* make up only 13.3%. NGOs compose 10%, followed by Other Organisations with 6.7%. Trade Unions, Professionals' Associations and Law Firms each represent 3.3% of Type C members[2].
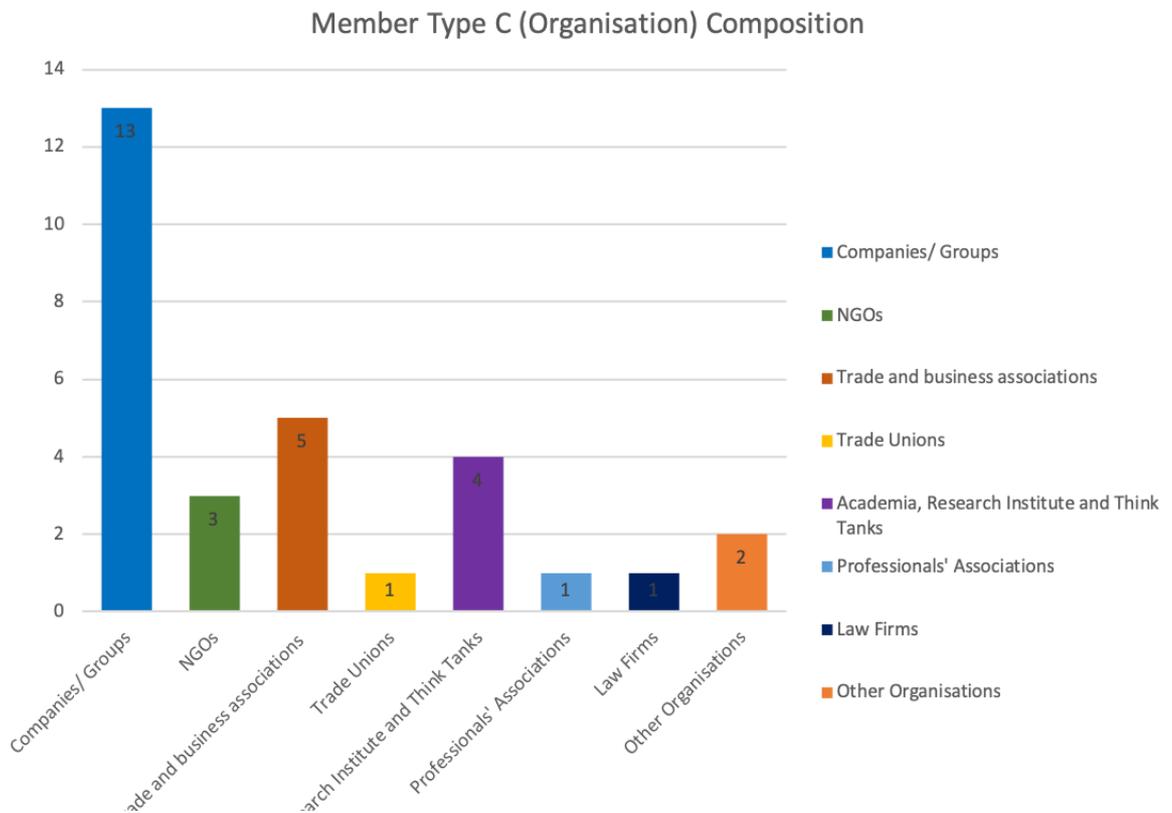

Figure 3

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[2] Percentages gave been rounded to one decimal place.

Each of these organisations is registered in the European Union's Transparency Register. This is an online database that lists all the organisations that try to influence law-making and policy implementation process of the European Union institutions (European Union, 2019) – in other words, which organisations are lobbying, advising or attempting to have an impact on the EU institutions. The Transparency Register was created after significant criticism was voiced regarding the widespread lobbying present in the EU institutions. There were concerns of a lack of accountability and transparency of the EU's decision-making process (Mańko, Thiel, Bauer, & European Parliamentary Research Service, 2014). The existence of this register supports the line of argument presented in public choice theory – that interest groups are heavily influential in the policy and regulatory process.

Neither the Treaty on European Union nor the Treaty on the Functioning of the European Union explicitly regulate the transparency of lobbying and interest group activity within the European Union institutions (Mańko, Thiel, Bauer, & European Parliamentary Research Service, 2014). However, the importance of consultation is mentioned in Article 11(1) TEU, according to which EU institutions are obliged to "give citizens and representative associations the opportunity to make known publicly exchange their views in all areas of Union action". Point (2) states that the institutions "shall maintain an open, transparent and regular dialogue with representative associations and civil society". However, the act of lobbying itself (dialogue between the EU institutions and representatives of specific interests) also has a clear legal basis in the Treaties as a form of participative democracy (Mańko, Thiel, Bauer, & European Parliamentary Research Service, 2014). The European Commission is required to engage in "broad consultations with parties concerned in order to ensure that the Union's actions are coherent and transparent" according to Article 17(3) TFEU.

The Transparency Register shows the interests that are being pursued by the different organisations, and also details the budget they dedicate to the activities covered by the register. This is supposed to give European citizens, and interest groups alike, the ability to scrutinise and track the efforts of lobbyists and interest groups.

Some of the organisations (Type C) present in the HLEG on AI were registered in the Transparency Register for the sole purpose of participating in the HLEG. An example is the polish law firm Robert Kroplewski Kancelaria Radcy Prawnego. This means that prior to becoming a member of the HLEG, it had neither directly or indirectly influenced the activities of the EU institutions – nor attempted to do so. Most of the other Type C member organisations were entered into the register many years prior to the establishment of the HLEG. Some were entered into the register as early as 2008 when the European Commission created its register, such as Airbus Group SE and Bayer AG. Some of the organisations, like DIGITALEUROPE, were entered in 2011 after the registers of the Commission and the European parliament merged.
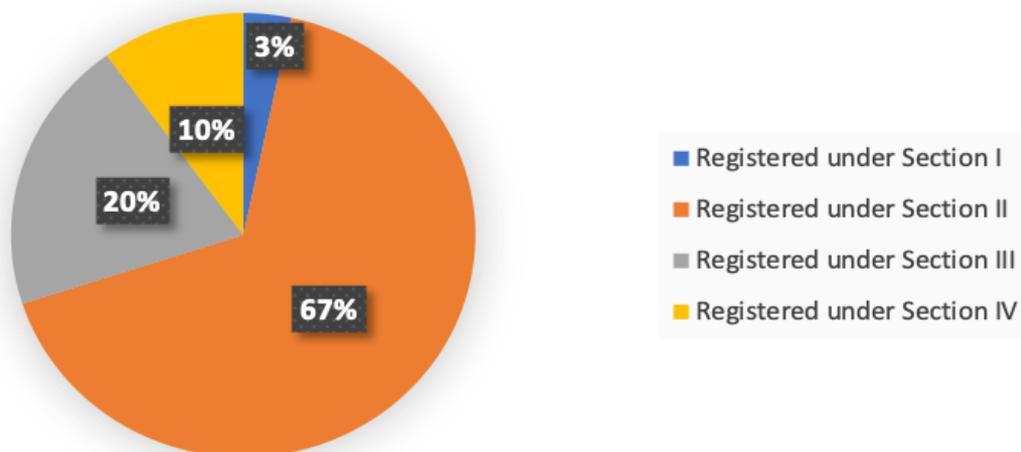
Figure 4

A key thing to look at is what section the organisations were registered under. **Section I** is the category of **professional consultancies/law firms and self-employed consultants**. Only one of the organisations in the HLEG on AI fell within this category, thus making up 3% of the Type C Members. **Section II** groups together **in-house lobbyists and trade/business/professional associations**. This is what the majority of the organisations in the HLEG on AI fall under with 67%. 20 out of 30 organisations are recognised as seeking to directly or indirectly influence the activities of the EU institutions in the capacity of lobbyist or this type of interest group. These

organisations appear to engage in rent-seeking behaviour in the interest of industry or professionals.

Section III organisations are categorised as **non-governmental organisations, platforms and networks and similar**. In the HLEG on AI these make up 20% of the type c organisations. 6 out of 30 organisations fall under this category and include Access Now, a non-profit NGO advocates in the interest of consumers, seeking to protect human rights in the digital environment. Another is the Austrian Hilfsgemeinschaft der Blinden und Sehschwachen Österreichs, a non-profit organisation that lobbies in the interest of the blind and visually impaired when it comes to the implementation of barrier-free measures, including in a technological context. Both of these are interest groups rationally lobbying in the self-interest of their organisation. However, here the interests overlap with the interests of the public or social welfare. Here we see interest groups representing interests that align with the public as stakeholders, whereas section II organisations represent the stakeholders in industry and that of professionals. However, although interest groups exist who assert to represent the public interest, it must be remembered that all interest groups represent the interests of their members (Holcombe, 2016). These interests may or may not align with the public interest. All lobbyists who petition the legislature or try to influence policy-making are asking for something that benefits the narrow interests of those who pay them (Holcombe, 2016).

Finally, **section IV** is for **think tanks, research and academic institutions**. 3 out of the 30 organisations (10%) fall under this category, with two universities and the Deutsches Forschungszentrum für Künstliche Intelligenz DFKI GmbH (DFKI – the German Research Centre for AI).

An interesting point discovered during the research conducted, is that some of the organisations are represented twice within the Type C Members. Organisations Airbus, Google, Nokia and SAP who are all active members in their own right, are also currently corporate members of DIGITALEUROPE, a European organisation that represents the digital technology industry and lobbies on their behalf (EPIC, 2019). DIGITALEUROPE is also an active Type C member in the HLEG on AI in its own right. All of these organisations fall under Section II (in-house lobbyists and trade/business/professional associations) of the European Transparency Register.

Name	Category	Transparency Register No.	Registration Date	Section of Registration
Access Now	NGOs	71149477682-53	11.01.12	Section III
Airbus Group SE	Companies/Groups	2732167674-76	26.11.08	Section II
AXA	Companies/Groups	36423781099-10	09.02.09	Section II
Bayer AG	Companies/Groups	3523776801-85	17.12.08	Section II
Bundesverband der Deutschen Industrie e.V.	Trade and business associations	1771817758-48	10.12.08	Section II
Bureau Européen des Unions de Consommateurs	Other Organisations	9505781573-45	29.10.08	Section III
Deutsches Forschungszentrum für Künstliche Intelligenz DFKI GmbH (DFKI)	Academia, Research Institute and Think Tanks	812201615063-80	01.12.14	Section IV
DIGITALEUROPE	Trade and business associations	64270747023-20	26.10.11	Section II
Élément AI inc.	Companies/Groups	592509430811-92	14.03.18	Section II
European Association for the Co-ordination of Consumer Representation in Standardisation (ANEC)	NGOs	507800799-30	30.06.08	Section III
European Banking Federation (EBF)	Trade and business associations	4722660838-23	19.12.08	Section II
EUROPEAN TRADE CONFEDERADTION	Trade Unions	06698681039-26	02.02.09	Section II
European University Association (EUA)	Other Organisations	81122172998-09	12.01.10	Section III
Google	Companies/Groups	03181945560-59	29.03.11	Section II
Hilfsgemeinschaft der Blinden und	NGOs	742752330806-73	13.03.18	Section III

Sehschwachen Österreichs (HGB				
IBM Corporation	Companies/Groups	7721359944-96	08.01.09	Section II
Institute of Electrical and Electronics Engineers, Incorporated (IEEE)	Trade and business associations	79856747620-58	06.01.12	Section II
Linköpings universitet (LiU)	Academia, Research Institute and Think Tanks	894332428190-55	21.09.17	Section IV
Nokia	Companies/Groups	35167875358-33	21.02.11	Section II
Orange	Companies/Groups	76704342721-41	07.12.09	Section II
ORGALIME – The European Technology Industries	Trade and business associations	20210641335-88	10.03.09	Section II
RELX Group	Professionals' Associations	338398611148-62	15.05.13	Section II
Robert Bosch GmbH	Companies/Groups	8999533555-91	24.10.08	Section II
Robert Kroplewski Kancelaria Radcy Prawnego (	Law Firms	738133231253-62	19.04.18	Section I
SAP	Companies/Groups	639117311617-01	22.07.13	Section II
STMicroelectronics (ST)	Companies/Groups	70843878143-13	24.02.12	Section II
Telenor	Companies/Groups	74126393166-46	02.02.10	Section II
The University of Birmingham	Academia, Research Institute and Think Tanks	617106816470-43	12.03.15	Section III
University College Cork, National University of Ireland	Academia, Research Institute and Think Tanks	568041320655-24	11.02.16	Section IV
Zalando	Companies/Groups	877966419254-70	17.12.15	Section II

The data presented in the table above was collected from the EU Transparency Register (European Union, 2019) along with the HLEG on AI information profiles (European Union, 2018).

Apart from knowing the types of organisations that are present in the HLEG it is also vital to understand what interests they represent and act in favour of. This will give an understanding of which policy direction they may seek to sway the process. Public choice theory stipulates that interest groups try to influence government actors on specific issues and take action to maximise the utility of their interests (Holcombe, 2016).
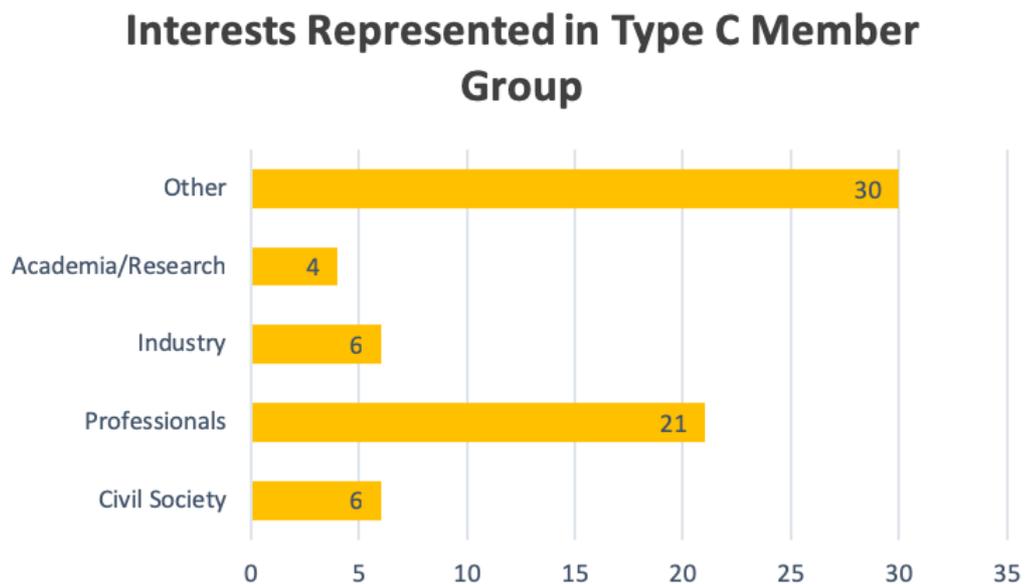
Figure 5

Since deducing what interests fall within the utility curves of the organisations takes in-depth research beyond that which the time constraints of this paper allow, the interests that were taken are those stated by the European Commission for each organisation. On the short profiles of each Type C member policy areas and interests represented are stated. All 30 organisations have the interest of 'Other' listed – however it is not specified what these other interests are. After this, the most prominent interest stated is that of 'Professionals'. Six organisations explicitly have 'Industry' stated as one of the interests they represent. Six organisations are listed to represent 'Civil Society'. This follows with 'Academia/Research as the least occurring listed interest represented within the organisations, with four instances. Following

the rationale of interest group theory, the organisations within the HLEG on AI will act in their capacity within the group mostly to further the interests of professionals.

3.4. Member Type A – Individual expert appointed in his/her personal capacity

Name	Professional Title	Current Employment	Organisational ties	Role in HLEG on AI	Additional
Ala-Pietilä Pekka	Chairman of Boards	Chairman of the Board of packaging company Huhtamaki, media company Sanoma and Netcompany. Member of Supervisory Board of SAP (multinational software corporation that makes enterprise software to manage businesss operations and customer relations.	Huhtamaki. Sanoma. Netcompany SAP Blyk Services Oy Nokia Ouij	Chair of HLEG	Operates in several expert groups, including being Chairman of steering group that rpepares for AI in Ministry of Economic Affairs and Employment. Has strong links to Nokia, which is also a Type C member of HLEG on AI.
Bauer Wilhelm	Organisation Director	Director of Fraunhofer Institute for Industrial Engineering	Fraunhofer Institute for Industrial Engineering - Research organisation - fields of innovation research, technology management, Smarter cities etc	Member	Members of several committees where he advises government and industry. Has over 350 scientific and technical publications
Bieliková Mária	Professor, Academic	Professor in program and information systems at the Slovak University of Technology, Bratislave	Slovak University of Technology. Insitutre of Electrical and Electronic Engineers (IEEE). Association for Computing Machinery	Member	30+ years AI and software engineering experience. Active in several professional bodies. Senior member of IEEE
Bonnet Yann	Engineer, Consultant	Former Secretary General of French Digital Council.	French Digital Council	Member	Steered national consultation on digital transofrmations, which was launched by the french Prime Minister in 2014 --> led to the Law for a Digital republic
Bouarfa Loubna	Machine learning expert. CEO and Founder of OKRA	CEO of OKRA Technologies	OKRA Technologies - AI platform for global life sciences/analytics company for healthcare. Mosaid Research Management - advising consultancy firms, hedge funds and private equity firms on AI	Co-Rapporteur	Worked in various companies on AI in healthcare
Coeckelbergh Mark	Professor, Academic	Professor of Philosophy of Media and Technology, University of Vienna	University of Vienna. Robotik-Rat Council. Foundation for Responsible Robotics. Institute of Electrical and Electronics Engineers Incorporated (IEEE). Society for Philosophy and Technology.	Member	Current member of entities that support policy building in robotics and AI e.g. Robotik-Rat Council and IEEE Global Initiative for Ethical Considerations In AI and Autonomous Systems
Dignum Virginia	Professor, Academic	Professor of Social and Ethical AI, University of Umea	University of Umea. Delft University of Technology. IEEE	Co-Rapporteur	Her research focuses on the ethical and societal impact of AI. Fellow of European AI Association (EURAI). Member of Executive Committee of the IEEE Initiative on Ethics of Autonomous Systems. Well-known speaker on social and ethical impact of AI.
Haddadin Sami	Engineer, Computer Scientist, Professor	Director of Munich School of Robotics and Machine Intelligence at Technical University Muncih	Munich School of Robotics. Technical University Munich.	Member	World leading researcher in the field of robotics and machine learning.
Hasselbalch Gry	Researcher and independent data ethics advisor	Co-founder of DataEthics.eu. Vice Chair of IEEE standardisation project P7006	DataEthics.eu - political ThinkDoTank on data ethics. Danish Expert Group on Data Ethics. IEEE	Member	Co-published book on data ethics. Has previous experience acting as independent data ethics expert.

Hilgendorf Eric	Professor, Academic	Professor of criminal law, criminal procedure and legal philosophy, University of Würzburg	University of Würzburg. Konztanz Faculty of Law. Jullius-Maximillians University of Würzburg	Member	Part of pioneers of E-learninf in Jurisprudence
Köszegi Sabine Theresia	Professor, Academic	Professor of labour science and organisation at TU Wien	TU Wien. University of Aarhus. Austrian Council for Robotics and AI	Member	Leadinf doctoral college on 'Trust in Robots'. Involved in research oriject 'Integrative Social Robotivd'.
Petit Nicolas	Professor, Academic	Professor of law at Liege University, Belgium and Research Professor at University of South Australia	Liege University. University of South Australia. Commercial Chamber of the French Supreme Court. Howrey LLP	Member	Research focus: antitrust law, IP, law in context of technological change. Wrote book on challenges created by AI and robotics in society.
Quintarelli Giuseppe Stefano	IT Specialist, Entrepeneur, Investor	Chairman of Steering Committee at Agency for Digital Italy. Member of leadership council of the UN Sustainable Development Solutions Network.	Agency for Digital Italy. UN Sustainable Development Solutions Network. I.NET. Clusit. AIIP.	Member	Former member of italian parilament - Commission of Internet rights, Parliamentary Intergroup for technological innovation. Founder of I.NET (first Italaian business internet service provider listed on the stock market) - was sold to BT. A founder and former board member of Clusit (Italy's Computer Security Association). Former chairman of AIIP (Italain ISP Association)
Renda Andrea	Social scientist. Academic.	Senior Research `fellow and Head of Global Governance, Regulation, Innovation and the Digital Economy at Centre for European Policy Studies (CEPS).	CEPS. College of Europe. Duke University Instiute for Ethics.	Member	Member of EC Economic and Social Impacts of Research Expert Group. Member of EU Blockchain Observatory Forum.
Soulié Fogelman Françoise	Machine Learning, Artificial Intelligence , Social Network Analysis, Big Data & Recommender Systems Expert. Consultant.	CEO and Consultant in Data Mining & Artificial Intelligence. Project Director in AI applications at SD Conseil. Scientifics Advisor at Hub France I.	SD Conseil. Hub France IA. Atos. Business & Decision. KXEN. SAP. Institute Mines Telecom. TeraLab. Mimetics. Tianjin University School of Computer Science.	Member	Was VP Innovation at KXEN until company was bought by SAP.
Tallinn Jaan	Programmer, Physicist, Entrepeneur, Investor	Partner at Ambient Sound Investments	Centre for the Study of Existential Risk. Future of Life Institute. Skype.Bluemoon Kazaa. MetaMed. Ambient Sound Investments. DeepMind.	Member	Participates in effective alturism movement (donated to Machine Intelligence Research Institute since 2015). Promotes study of existential risk with strong focus on artificial intelligence. Wants to prevent technological
Van Wynsberghe Aimee	Assistant Professor, Academic	Assistant Professor in Ethics and Technology at TU Delft. Co-Director of Foundation for Responsible Robotics. Head of 4TU Center for Ethics and Technology robotics task force.	TU Delft. Canadian Surgical Technologies and Advance Robotics Institute. Foundation for Responsible Robotics. Institute for Accountability in a Digital Age. AI & Intelligent Automation Networ. 4TU Center for Ethics and Technology.	Member	Auhtor of 'Healthcare Robots: Ethics, Design and Implementation'. Awarded NOW personal research grant to study how to design service robots responisbly.

Above, short profiles have been put together of the current active 'Type A' members in the HLEG. As previously outlined, these members are appointed in a personal capacity and are required to act independently and in the public interest according to the composition features specified during the call for applications. As these are the only members that are specifically required to act entirely independently and explicitly in the public interest, it is also vital for this analysis to also map these

members. It is rational for these members to act in their own self-interest, seeking to maximise the utility of their interests (Stigler, 1971). As previously detailed, the members of the HLEG on AI do not receive any direct remuneration for their participation in the work the group does. As a result, the assumed incentives for participation are the advancement of one's interests, to have influence of some kind, to prevent unfavourable policy and perhaps the prestige of participation. The HLEG on AI is specified as being temporary in nature – this makes any influence, advancement of interests and rent-seeking more valuable as the opportunity to influence is limited but the effects long-reaching. The 'Type C' members are representing organisations; they are there due to the incentives that make membership in the group desirable for the interest groups and employers they represent. The representatives seek to maximise their own utility by advancing the interests of those that pay them – the organisations they directly represent. However, the 'Type A' members do not have the direct representation element. Their supposed goal is to advance the public interest. However, public choice theory stipulates that although they may claim to represent the public interest, really, they further their own utility and their own interests (Holcombe,2016). In this case it is important to look at the employment and the organisation affiliations of these *independent* members. As ultimately, somebody pays them too.

Research showed that they were all clearly experts in their field with a substantial amount of experience combined. The research also showed that the majority of these 'Type A' independent members were currently working in academia in different relevant fields. 10 out of 17 are employed in the capacity of professor, assistant professor or experts in their field working at research institutions and think tanks. They are joined by experts that are members of other international organisations working in related fields. However, something to note is that in this member group, there are also several members with industry ties. Some of these industry ties are to organisations that are 'Type C' members in the HLEG on AI. The Chair of the HLEG sits on the Supervisory Board of SAP. SAP is an active type C member and is also a corporate member of DIGITALEUROPE, which is also a type C member. Another member was the CEO of a company that was bought by SAP. The Chair also had a 21-year career at Nokia, another Type C member. Besides this, he is

currently on several boards for industry companies. At least 4 of the members are currently working on initiatives and projects with the Institute of Electrical and Electronic Engineers (IEEE), an organisation which is also a Type C member of the HLEG on AI. This organisation is also registered under Section II of the Transparency Register.

The data presented in the table on the Type A members of the HLEG on AI was collected through research from their profiles presented by the European Commission (European Commission, 2018b), their LinkedIn profiles, press releases and information put out by their employers.

3.5. Member Type B – Individuals appointed to represent a common interest shared by stakeholders

Type B members are appointed to "represent a policy orientation common to different stakeholder organisations" (Commission's Directorate-General for Communications Networks, Content and Technology, 2018, p.3). There are two of these members in the HLEG on AI. It is explicitly stated that they are prohibited from representing an individual stakeholder. Despite this, both are employees of specific organisations (European Union, 2019) (European Union, 2018):

Name	Employer	Employer Transparency Register No.	Section of Registration	Registration Date
Sharkov, George	European DIGITAL SME Alliance (Digital SME)	082698126468-52	II - In-house lobbyists and trade/business/professional associations	24.03.17
Floridi, Luciano	University of Oxford	992354120482-79	IV - Think tanks, research and academic institutions	29.01.16

Both Type B members work for organisations that have been seeking to directly or indirectly influence the activities of the EU institutions for a number of years, as their Transparency Register registration dates show. However, they have been recognised in their different capacities. One member represents the interests of small and medium sized enterprises (SMEs) working in the digital sector (DIGITAL SME) – and

therefore industry interests. The other member's employer has been recognised as furthering the interests of academia and research.

3.6. Member Type E: Other public entity

According to the initial call for applications, other public entities and organisations "shall nominate their representatives and shall be responsible for ensuring that their representatives provide a high level of expertise" (Commission's Directorate-General for Communications Networks, Content and Technology, 2018, p.3). Two members within the HLEG on AI fall into the category of Type E member. The representatives are both from European Union institutions or bodies: The European Union Agency for Fundamental Rights and the European Economic and Social Committee (EESC). There also 18 additional 'other public entities' present during HLEG meetings, however, they are not active members and are there solely in an 'observation' capacity.

3.7. Overview

From the data presented, assumptions can be made as to who is most likely driving the policy and regulatory stances to best align with their interests within the group. Even with the research only reaching the depth that it has within this paper, there is enough evidence to suggest an industry bias within the HLEG on AI. This combined with the simple majority voting system leaves sufficient room for industry interest groups and representatives to sway the development of the policy and regulatory framework in a specific direction in order to maximise their utility and favour the interests they represent (Stigler, 1971). The next chapter will also focus on data analysis and will compare the results from the prior analysis with the contents of the first and second draft of the *Guidelines for Trustworthy AI* document, along with the *Policy and Investment Recommendations for Trustworthy AI* document that was published by the HLEG and submitted to the European Commission as recommendation. Particularly, the responses and individual opinions of HLEG members are of interest. This will give an insight into who they believe is steering the direction and ultimately engaging in a form of regulatory capture.

Chapter 4: HLEG on AI: Analysis part two

4.1 Industry bias

In order to avoid regulatory capture from industry interest groups, certain measures could be in place. Attention should be paid to how much of the group composition is made up of industry representatives. This includes representatives that do not explicitly state industry representation but have strong industry ties or claim to represent closely-linked interest, such as those of professionals or similar groups. The research data used to map the members of the HLEG on AI in their different capacities (individual experts, organisations, other public entities, those representing common policy approaches etc) paints a fairly strong picture. Clear bias towards industry in the composition is already setting the stage for industry to have disproportionate influence. The Commission's intentions are stated to want a multi-stakeholder group that adequately represents the different interests and furthers the public interest. (Commission's Directorate-General for Communications Networks, Content and Technology, 2018). The interests represented have driven the proposals for the *Guidelines for Trustworthy AI* document, along with the *Policy and Investment Recommendations for Trustworthy AI* document. The influence of these proposals and publications must not be underestimated, since they contribute to the EU's long-term budget decisions, multi-annual financial framework for 2021-2027 and the things that will be prioritised by the Commission over the coming years. So, how does the industry bias appear to be affecting the process?

4.2. Guidelines for Trustworthy AI

Some of the most prominent initiatives towards the creation of ethical principles for AI and 'autonomous' systems have come from industry, practitioners and professional associations, such as the IEEE, the International Telecommunication Union and the Association for Computing Machinery (European Group on Ethics in Science and New Technologies, 2018). Within the private sector, companies such as IBM, Microsoft and Google's DeepMind have established their own ethic guidelines on AI and joined forces in creating initiatives such as the 'Partnership on AI' or 'OpenAI', which bring together industry, non-profit and academic organisations. (European Group on Ethics in Science and New Technologies, 2018). So, the HLEG on

AI's task of creating ethics guidelines is not something that directly conflicts with industry interests. The IEEE, IBM and Google are all active members of the HLEG. As established in the findings in the previous chapter, the composition of the HLEG on AI favours an industry influence. Public choice theory outlines that in rent-seeking behaviour, interest groups seek to obtain favourable policy and regulation that not only directly benefits them but also policy that is detrimental to their competitors – creating barriers to entry (Stigler, 1968). Ethical guidelines that already align with their own may become a hurdle for competitors, whilst also ensuring little additional cost to them, in terms of compliance.

The publishing of the HLEG on AI's ethical guidelines were praised as being a signal of Europe taking the lead in the global AI ethical debate. The guidelines centre around four ethical principles: respect for human autonomy, prevention of harm, fairness and 'explainability' (HLEG on AI, 2019a). As outlined in the chapter on AI and its global impact, establishing itself as a leader in AI governance is of great geopolitical and economic importance to the EU. However, some individual reactions of the HLEG members give indications that are in line with the findings of this paper: that industry is having disproportionate influence. Thomas Metzinger one of the Type C members representing the European University Associations voiced his opinions in an online publication one day after the ethical guidelines were published. He described the paper as a 'case of ethical white-washing' (2019). As an ethicist and professor of theoretical philosophy, in his view, the text is a compromise he is not proud of, despite it being significantly better than anything that other global actors have generated. He describes the "Trustworthy AI story" as an industry-invented marketing narrative for "tomorrow's customers" (Metzinger, 2019). He takes issue with the composition of the HLEG – with only 4 ethicists present. There is mention of the HLEG's "extreme industrial weight" that has contributed to ethics guidelines that are "lukewarm, short-sighted and deliberately vague" and that "ignore long-term risks, gloss over difficult problems with rhetoric, violate elementary principles of rationality and pretend to know things that nobody really know"(2019). From his article one learns that he, along with a machine learning expert, was personally tasked with developing 'Red Lines' – non-negotiable ethical principles determining what should not be done with AI in Europe) (Metzinger,2019). Following their

creation, the Chair of the HLEG, who it is noted to have industry ties to Nokia, asked the phrase 'non-negotiable' to be removed. This was according to him, followed by many industry representatives vigorously insisting on entirely removing the phrase 'red lines' from the text (Metzinger, 2019). The paper ultimately published by the HLEG on AI and the European Commission does not contain the phrase 'Red lines' and instead talks of critical concerns, something confirmed in the research of this paper (HLEG on AI, 2019a). According to Metzinger, three of the original red lines were removed entirely and the present critical concerns are "watered down" versions (2019). This falls in line with Stigler's argument of regulatory capture. In this case the 'ethics washing' presented, sees industry interest groups engaging in the HLEG activity to further their own interest – they cultivate ethical debates that buy time, align with their own position, steering policy in a direction that is most favourable to them and simultaneously delaying more effective policy-making.

Metzinger is not the only member of the HLEG on AI to have commented on the guidelines independently. Andrea Renda, a social scientist and academic appointed to the HLEG in his individual capacity (Type A member), also voiced his thought. He works as a Senior Research Fellow and Head of Global governance, Regulation, Innovation and the Digital Economy at the Centre for European Policy Studies. Renda touches on the fact that there is significant alignment between many of the existing ethics declarations created by tech giants and the industry. These industry ethics guidelines are not binding and are not meant to be enforced. The Guidelines created by the HLEG are also not directly enforceable – but go further than its industry predecessors as they specify that 'Trustworthy AI' also implies compliance with EU law and fundamental rights (Renda, 2019b). However, he also notes that the guidelines contain no "strong statements" such us "AI should never discriminate". However, according to Renda they may not be necessary, as it leaves it up to the EU institutions whether to create a binding framework (Renda, 2019b).

From both commentaries one can infer that despite the guidelines themselves being a huge positive advancement in the right direction, they do not concretely limit or restrict and are more on the vague side, pending further development. Metzinger puts this down to industry in influence.

4.3. Policy and Investment Recommendations for Trustworthy AI

The second publication by the HLEG on AI, published in June 2019, goes further than creating guidelines and directly makes policy and investment recommendations. Here there is already a drastic increase in the influence being exerted by the HLEG. The document recommends the HLEG's ethics guidelines be deployed by the public sector. The document also goes as far as recommending a concrete ban on AI-enabled mass scale scoring of individuals (similar to the citizen scores already operating in China). There are also calls for the development of specific criteria for red lines. The report also recommends refraining from "disproportionate and mass surveillance of individuals" and recommends that "commercial surveillance of individuals (particularly consumers) and society should be countered". However here the language is no longer so concrete. In fact, the remainder of the document is significantly vaguer on actionable policy, with many recommendations listing increased research as the next step. References to boosting or encouraging research are mentioned over 120 times in the document.

Once again, some members of the HLEG voiced independent opinions regarding the policy recommendations - these also appear to be in line with the findings presented in this paper that the HLEG has become a pathway for industry to engage in regulatory capture due to the industry bias in the group. Fanny Hidvegi, AccessNow's European Policy Manager and HLEG on AI Type C member (representing AccessNow), is one of these individuals that have spoken out. AccessNow is a non-profit NGO advocates in the interest of consumers, seeking to protect human rights in the digital environment – as such it is deemed a non-industry interest group, whose interests align with certain public interests (Holcombe, 2016). Hidvegi acknowledged that the publication was a step in the right direction in terms of addressing some of the most pressing AI concerns but ultimately deemed the document to "fall short of doing what is needed to enforce the highest standards of human rights compliance for AI that is designed, developed and deployed in the EU"(Hidgevi,2019). She judged the document to be overly vague, lacking "clarity on safeguards, red lines and enforcement mechanisms" (Hidgevi,2019). It is clear that in her expert opinion the HLEG' Policy and Investment Recommendations focus on the wrong thing – achieving maximum uptake of AI in public and private sectors. AccessNow calls for "concrete, actionable policies instead of so-called 'trustworthy AI'" (Hidgevi,2019).

The opinions voiced from inside the HLEG by non-industry representatives support the argument that industry is having the most influence. The composition data along with the definite interests confirmed as being represented, combined with the contents of the HLEG's publications and testimony from members within the group are enough evidence to at least suggest the process is being steered by corporate interests. There are also questions regarding the efficiency of the Transparency Register, as all of the findings presented in this paper, along with the accounts of members of the HLEG, are all perfectly legal within the transparency norms governing the expert groups. The transparency register appears to be a signal from the EU that lobbying exists, but it does not do much beyond this nor does it influence lobbying. This warrants further research if policy and regulation being built by industry is not the EU's desired scenario.

Conclusion

Hypothesis

The hypothesis presented was that the development process is industry biased and that industry is therefore in the position to have the most evident influence in the HLEG on AI, as opposed to actors representing independent interests or associations that represent other interests such as those of consumers. This followed Stigler's (1971) argument that most regulation is really built by industry via interest groups that engage in regulatory capture. From the findings of this paper, this appears to hold true in the case of the HLEG on AI. There is evidence to suggest that the HLEG on AI is a pathway for regulatory capture, with industry interest groups being in a dominant position to steer part of the development process that will ultimately lead to a policy and regulatory framework on AI, by influencing the stance of the HLEG in its publications.

Limitations

The study conducted in this paper has huge potential for further study and development. The method of analysis chosen in this paper is well suited but has its limitations. Public choice has empirical evidence, however, in this particular case it was difficult to get concrete information regarding the interests driving the subjects in the HLEG on AI and how they may have conflicted in the deliberation process aside from that already published. For example, the minutes of the HLEG meetings are not published. There was no response to the request to have access to these minutes. This limits how detailed the public choice analysis could go. Due to other constraints this paper does not include data generated from interviews or questionnaires posed to HLEG members. This means that a lot of the analysis is dependent on certain assumptions holding true, in conjunction with the data collected. The data presented in this paper is that which is readily available if one is to conduct research. Furthermore, this paper chose a small focus group – the HLEG on AI, but there are also other factors to the development of policy and regulatory frameworks for AI in the EU which have not been included. A quantitative approach was rejected in favour of a qualitative approach.

The public choice analysis could be further developed through the use of the questionnaire research instrument. A series of questions could be posed to members

of the HLEG. The questionnaire would aim to collect data on the what the members deemed to be priorities in the process and whether they believe the documents put forward are favourable to what they perceive to be priorities. Identifying how they measure success and whether they believe to have been successful will allow for a comparison to the prior analysis in this paper. Data from the questionnaire would allow for more accurate tracking of interests, priorities and influence in a public choice analysis.

Appropriateness of framework

The public choice framework is particularly relevant for this topic (Regulation of Artificial Intelligence in the EU), is because it is such a new area of development with far-reaching long-term effects. The uniqueness of the subject makes the application of the public choice framework particularly important. In other areas of research and policy, there has been substantial lobbying and influence from both sides of the isle. Regulatory and policy frameworks have existed for decades and non-industry interest groups also carry significant influence. Here the HLEG on AI is at the centre of the creation of an entire policy direction and regulatory framework from the outset and the opportunity for regulatory capture is already evident. In the case of AI, the vast strong opposition forces have not had the same growth element. The most prominent interest groups are not only from industry because they are the most organised or have the lowest transaction costs – the most prominent interest groups are from industry because industry has the most information, they are the ones that have been mostly driving development and pushing innovation up to this point. Civil society and academic interest groups have not had the same time to develop and take action. The composition in the HLEG on AI paired with the simple majority voting system ensures that industry is in the best position to be the loudest voice. One thing to note is that it is not an issue to have industry interest groups involved or driving the development of policy and regulatory frameworks – it is not a negative thing in itself. However, the European Commission has made it clear that having an industry bias is not their desired outcome – this is evident by their repeated statements of seeking to have adequate representation from a broad spectrum of stakeholders.

Recommendations

The issue of the industry bias and regulatory capture in the HLEG on AI could be addressed by looking at two things: the composition and the simple majority voting rule. The first option would be to change the composition – however the issue of plurality is hard to address. Extensive background checks would need to be made to ensure that no members had additional secondary ties to interests different to those they are supposed to represent – this in itself may be superfluous and may result in the exclusion of the necessary experts that are the best in their field. The dominance industry has gained in the HLEG can be seen as a natural monopoly (Tullock, 1965). As previously mentioned, industry has the most information in this field and has had the most time to cultivate dominance to then use to influence policy. This is an example of the extreme entry barriers in politics. In this case they are time, expertise, funding, lack of previous framework of its kind, amongst others. These are currently faced by civil society interest groups and other stakeholders and make it difficult to simply change the composition and still retain the needed expertise and information.

The HLEG members could also be reduced or increased in number to counteract the industry influence dominance. However, it is unclear how the current number was reached – with the initial call for applications stating up to 30 members, the original group consisting of 52 members, and now working with 51 active members. Fixing the composition by altering the number or percentage of certain interests this way is not a perfect solution. Physical change in composition may still be counteracted by the simple majority rule. This brings us to the second possibility of addressing the issue: increasing the voting majority.

The reasons behind the simple majority rule are not explicitly made clear by the Commission. One factor may be due to the 'non-binding' nature of the recommendations of the HLEG on AI. However, the HLEG on AI has become a de facto policy-maker. The publications put out by the group have been endorsed by the European Commission. The Commission has even called on the private sector to start using the ethics guidelines – and this is only the beginning of the HLEG's activities and influence. Pareto optimality would only be achieved if a unanimity voting rule was adopted due to the redistributive elements of majority decisions (Buchanan & Tullock, 1962). This would ensure that everybody was equally heard. However, this is not without its issues as really small groups or representatives within the group

would have a lot of power. By being the last to fail to agree, they would hold all the bargaining power – this would be a classic example of a hold-up situation. They could prolong the process and make disproportionate demands in return for their approval. Ultimately, unanimity would dramatically increase the decision-making cost. As specified by Buchanan & Tullock, (1962), there is a trade-off between the external cost imposed and the decision-making cost when it comes to voting. Any decision made in a group with less than unanimity rule will create an asymmetry in gain-sharing amongst the individual members of the group (Buchanan & Tullock, 1962). The smaller the majority required for the consensus to pass, the greater the external cost imposed on the remaining voters who did not agree, as there are more of them whose disagreement is disregarded. However, the greater the qualification number of votes, the longer it takes for an agreement to be reached, thereby increasing the transaction cost of making a decision (Buchanan & Tullock, 1962). Ultimately, unanimity rule is impossible in such a context, as there would always be a bully and the decision-making cost extreme. As a result, a qualified majority rule is recommended.

Summary

The safe and ethical use of AI is a global challenge and there is still a significant policy and regulatory gap to fill in this respect. Given the significance that the development of policy and regulatory frameworks for AI will have on the future of the EU, it is important to understand the influences shaping the development process. Applying the public choice model not just to regular democratic decision-making but High-Level Expert groups is an innovative line of analysis with little current research out there. However, there is a lot of potential for further study. Despite their advisory and non-binding nature, such groups carry a lot of weight in the political decision-making process. This paper took a small cog in that process and analysed the HLEG on AI to lay the foundations for further understanding. Ultimately, there was significant evidence to support the hypothesis presented. However, this is neither negative nor positively judged in this paper. As previously outlined, the public choice framework simply uses economic tools to analyse political decision-making.

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