TILT Signature Plan: Regulating Socio-Technical Change

Aims and Objectives

There are two ways in which socio-technical change impacts on law and regulation. On the one hand, socio-technical change challenges our understanding of law and society and requires us to rethink the legal and regulatory framework. For instance, how do we protect privacy in an era of mass surveillance? How to adjust liability rules with self-driving cars?. On the other hand, socio-technical change can itself be used to develop novel regulatory tools, such as using artificial intelligence to make regulatory decisions. These are the key ingredients of this research program.
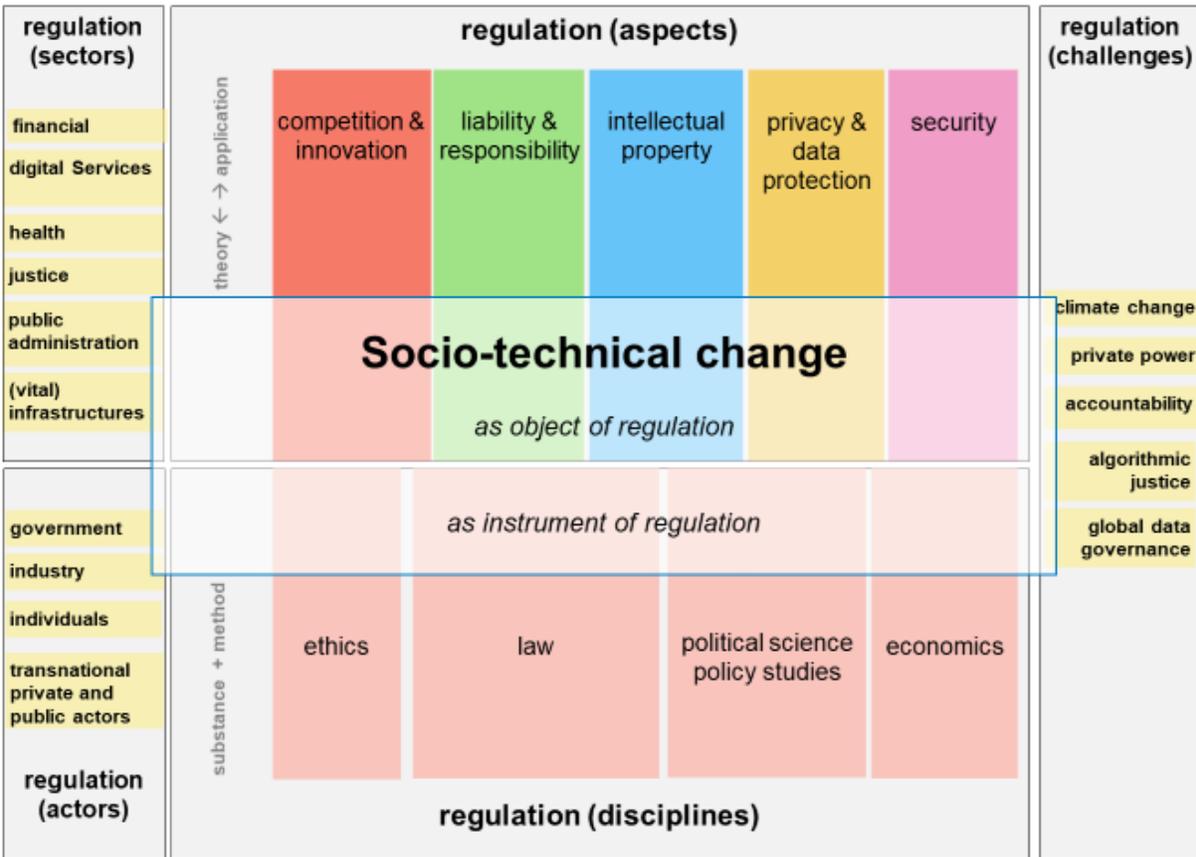
The research in this signature plan is divided in three clusters.

- The **governance cluster** brings in a multidisciplinary analysis emphasizing the way in which technology impacts on power relations and how those in power use technology. It provides an overarching perspective on the nature of socio-technical change and the role of law and institutions in this new space.
- The **fundamental rights and technology cluster** focuses on the relationship between rights and technology with an emphasis on privacy and data protection, cybercrime and cybersecurity and the relationship between AI and fundamental rights.
- The **competition & innovation cluster** focuses on the regulation of innovation with particular attention for digital and energy markets.

These three clusters provide a robust framework by allowing the team to carry out fundamental research to explain the impact of socio-technical change on law while retaining the flexibility to accommodate new interests as new challenges emerge from technological transformation, for example the emerging social relations in the so-called metaverse, which promises to create a new space for interaction with considerable risks to vulnerable users and the creation of new markets.

Figure 1, below, gives an illustration of the analytical framework for our research. At the center, the box setting out socio-technical change as an object and as an instrument of regulation points to the two key fields we study: socio-technical change is an *object of regulation* because the existing legal order is no longer fit for purpose and a new regulatory paradigm is required. A major law and technology scholar, Roger Brownsword, has recently summarized the development of the field by distinguishing between 'Law 1.0' (i.e., the existing legal order) and 'Law 2.0' which are the new rules that become necessary given the disruptive impact of modern technologies. Socio-technical change is also the *subject of regulation* because we can use technology to regulate human activity, what Brownsword calls Law 3.0'. We then take laws 2.0 and 3.0 and evaluate them in an inter-disciplinary manner (disciplines at the bottom of the table) and apply them to certain aspects of regulation (those identified at the top of the table). Regulation is then studied in certain specific sectors, having regard to relevant actors (the left-hand side), having regard to the major regulatory challenges (listed on the right-hand side).

Figure 1: Perspectives on socio-technical change

regulation (sectors)
- financial
- digital Services
- health
- justice
- public administration
- (vital) infrastructures

regulation (actors)
- government
- industry
- individuals
- transnational private and public actors

theory ← → application

regulation (aspects)

competition & innovation	liability & responsibility	intellectual property	privacy & data protection	security

Socio-technical change

as object of regulation

as instrument of regulation

substance + method

ethics	law	political science policy studies	economics

regulation (disciplines)

regulation (challenges)
- climate change
- private power
- accountability
- algorithmic justice
- global data governance

With this design, the signature plan is designed to provide a platform for research pertinent to regulating socio-technical change with researchers in each team considering the following overarching questions:

- What are the challenges for regulation?
- How is socio-technical change to be regulated?
- Who are and who should be the major actors?

During the first two years of the signature plan, each team answered the three questions in a way that provides a set of shared themes. This shows the potential for the signature plan members to develop further collaboration across teams.

For example, when asking what the challenges for regulation are, many researchers focus on the regulation of power imbalances and on the relationship between power and technology: how technology confers economic or coercive power on certain actors and on how powerful actors use technology to cement or exploit this power. Some researchers have focused on the emergence of new forms of power, others on how technology further strengthens the state's power and others on how technology cements economic power.

The identification of existing and new configurations of public authority and private power and the role technology plays in shaping power raise questions about how these sites of power are to be regulated. For instance, new surveillance techniques may improve the detection of crimes and the prevention of terrorist activities, but at the same time surveillance techniques may be based on false assumptions and wrong data and may therefore lead to injustices and the violation of human rights. In asking how to regulate, each team considers a number of shared challenges: the difference between law in the books and law in action which then serve to indicate regulatory failures, the difficulties of securing future-proof regulation, the difficulties as how to safeguard often conflicting values and interests, and the role of public and private forms of regulation. For instance, in various fields we see private actors increasingly becoming involved in enforcing public values – ranging from private bodies setting security standards to digital platforms steering the level of privacy, innovation and freedom of expression. In terms of sectors, healthcare, energy, and finance are core to our activities and are analyzed from different perspectives across the teams. More generally, a question underlying the research agenda is how data can be governed as an infrastructural input in an effort to maximize benefits of data-driven products and services while minimizing risks in terms of privacy, justice and competition.

The emphasis on sources of power and authority also leads to shared questions when it comes to asking who the major actors are in the regulatory debate: researchers challenge the public-private law divide by revealing how technology needs to ensure that it functions consonant with public values and to addresses all manifestations of power. The proliferation of new regulations to address new technologies since the start of the signature plan raises questions about how to coordinate enforcement when faced with multiple sites of regulation and jurisdictions.

Considering the research output as a whole so far, additional shared themes have emerged. In particular, asking questions about where regulation occurs (i.e., at a local, regional or global level) and the consequences of this. The signature plan also has the potential to stimulate comparative reflections to account for different regulatory strategies across the various fields. Notably with respect to the latter, the ever-increasing servicification of the global economy, partly accelerated by technological advances, leads to a reconsideration of the opportunities and limits of regulatory solutions beyond national boundaries, be it State-to-State (e.g. treaties) State-to-private (e.g. investment-related contracts, often critical for global value chains) or private-to-private (e.g, codes of conduct, voluntary standards, or other soft-law instruments, and 'code' (software)).

Methods

The signature plan is a multi-disciplinary endeavor. Projects draw upon, and seek to contribute to, methodological approaches within the fields of regulation and governance, philosophy and data ethics, social and technical studies, law and economics, and public administration. Research seeks to translate, engage and integrate findings in other disciplines to sharpen our understanding of the legal order. Most projects are largely desk-based research, while a number of projects reply on empirical methods and some on legal analytics.

Originality and innovative aspects

In its three-cluster structure, TILT research embraces both mono-disciplinary excellence and multidisciplinary curiosity. The output from these three clusters of research is innovative: in addition to than taking a single discipline (law) or a single field (healthcare) or a single technological phenomenon (artificial intelligence), the signature plan also creates a space for dialogue across disciplines and across fields that are affected by socio-technical change. This serves to generate fundamental research which is based on a richer set of methods and topics than is typically found in most existing research elsewhere. The plan foresees synergies among participants and across the clusters of issues in order to address the three interrelated questions. It is designed to foster conversations among researchers which we expect to lead to the discovery of new possibilities for collaboration among the researchers within and outside TLS.

A shared ambition by the TILT community is to publish frontier research in the top academic mono- and multi-disciplinary journals in the field. Occasionally, we will pioneer by soliciting, in collaboration with external partners, innovative contributions to map and explore a new field in the form of a collection of essays or conference proceedings. However, research on sociotechnical change presupposes innovative inquiries into the role of and impact on society. TILT aims to lead such discussions, both at the academic and policy level, through knowledge dissemination in edited collection of essays; submission of briefs in requests for stakeholder consultations by policymakers; policy reports clarifying the legal and political economy landscape; or other forms of academic engagement with sociotechnical phenomena. This, however, is not a mere theoretical exercise; rather, we strive at sharing academic and policy findings through TILT educational programs and other platforms to inform, educate, and engage an ever-increasing number of students, scholars and professionals interested in the mechanics of sociotechnical change.

Research will be of value to policymakers, legal professionals and other stakeholders in the Netherlands, the EU, other international organizations and other Member States, and possibly further afield. It will be disseminated though publications but we also expect a good number of researchers to be active in stakeholder consultations, to reach out to the press and to use social media to communicate their research to a wider audience.

Links to awarded research funding and contract funding

TILT relies heavily on second- and third-stream funding. Some of the funding that has been obtained pre-dates the signature plans. Henceforth, researchers will be encouraged to bid for funding on projects that are related to or complement the signature plan.

Links to educational activities of TILT

TILT wants to link its teaching activities, including teaching the Law and Technology Master and the teaching activities in the diverse range of other bachelor and master courses in Law, as well as in Data Science education, with the fundamental and applied research being developed on the basis of the Signature Plan.

Research themes of the teams

1. *Research themes of Governance team*

The Governance team's research collectively frames the governance of technology as a process of arbitrating between different interests according to often-conflicting worldviews. The governance team looks at this process from different and complementary perspectives, which allows us to work together to advance theory and practice, but also to explore how these worldviews and the institutions that enunciate them become constructed, and how they are made real by law, political process, and by other private or informal governance mechanisms.

The team brings together a legal strand of research focusing on law and its interaction with political economy, with a strand involving both philosophical inquiry and social scientific action research where we build and participate in implementing alternate legal and governance imaginaries for digital technologies and regulation. This mixture makes us both flexible as teachers and a collaborative resource for the rest of the department. This contribution to the signature plan aims to preserve and build on this diversity.

Methodologically, this group's work is multidisciplinary and global in scale, and takes place along a spectrum from theoretical inquiry, through empirical work on law and policy, to action research which aims to create real-time change in those fields. Our methodological capacity spans the fields of legal and regulatory research, political economy, ethnography and philosophical inquiry (including legal philosophy, STS, and social justice).

What: process and outcomes of arbitration of interests

For the governance group, the 'what' of regulating socio-technical change is the process and outcomes of arbitration between interests at different scales, and the outcomes of these processes. We research both how technology shapes power, and how power shapes technology: first, how technology confers the power to control, act and decide, and how that power is either conserved or shared by those who have it. Second, the world of standardization and private regulation is also interested in the reverse relationship, i.e., how the power to act determines what technology will be used. We therefore also research how the power to act and decide can be an important factor in determining the type of technology used among competing technologies on offer.

How: interaction between actors at different scales

The 'how' takes in both public and private forms of regulation and refers in particular to interaction between actors at different geographic scales. Specifically, we look at how these processes of power building and power sharing shape regulation: whether it takes place through technology (techno-regulation), through administrative or other legal methods (legal regulation) or through political methods (through democratic process, and particularly in the shape of social movements). . In relation to our two objects of study – understanding how technology shapes political and legal power, and how the power to act shapes what technology comes to exist – we are interested in the options available, or to be created, to achieve a fair(er) and balanced outcome from a legal, economic, and/or ethical and philosophical perspective.

Who: the whole range of public and private actors involved In regulation

The 'who' of regulating socio-technical change is, for our group, the whole range of public and private actors involved in regulation, from international organizations through state institutions to private, special interest groups and individuals affected by technology and who in turn have input through political representation and legal claims. There is also an important strand of our group's research that focuses on how to expand and rethink the 'for whom' of governance. Here we look critically at governance actors' understanding of who should be able to be heard in debates on governing technology, and whose interests must be served, and consider how to take account of claims on the part of those whose interests and perspectives have historically been marginalized.

Reconciling social with economic values

Perhaps most importantly for characterizing our contribution as a group, the questions we aim to answer follow the main theme present in legal, regulatory and societal debates about technology: how to reconcile social with economic value(s). As such, we can broadly group our team's contribution into research dealing with creating, channeling and protecting social value(s) (where we find debates about rights, ethics, accountability and the public interest), and research on producing and shaping the production of economic value (corresponding to debates about the roles of private versus state actors in regulating technology, innovation policy, and technology's intersection with finance). As such, our work provides methodological and disciplinary complementarity to that of the other teams on topics such as rights, competition and innovation.

Our future potential

We are positioned to contribute to research, education and policy input, in the following ways:

1) Contributing to TILT's research overall with legal, structural and political economy analysis of regulation

The research foci within our team (refer to the governance team of TILT) enable us to analyze both the sociopolitical environment in which regulation operates, and the mechanisms through which regulation becomes effective (i.e., the conjunction of political forces, ethical and normative currents, and both public and private tools for regulation). This focus on the underlying conditions under which regulation can be made, and can have effects, also means we have the capacity to analyze the contextual, longer-term aims and outcomes of regulation, informing our research with a historical perspective and with an international one. As such we are positioned to contribute critical research to both policy and the academic community on the normative underpinnings of concepts such as legitimacy, trust and democratic accountability, and on the nature of 'good governance'. We are also engaged in theoretical innovation in relation to technology regulation, giving us the capacity to contribute on new concerns arising around regulation that traditional legal framings have not so far integrated, including decolonization, equity and justice in relation to technology regulation, and the constitutional and international law aspects of technology and rights.

2) Globalizing TILT's research

The governance team is populated by a global group of researchers, representing the view from different regions and systems of governance. Together, we have a network that is truly global. We also draw on very different methodologies, disciplinary perspectives and philosophies of governance and regulation, which answer the need to situate TILT's research and to expand the range of (research) problems we have the capacity to address as an institute. We propose to build on this international capacity to inform both the research we do and what TILT can offer students. We propose to expand the internationalization of our research and education by taking on problems that go beyond the EU, actively building our network of collaborators on the global level and expanding our capacity to teach courses relating to global governance (for instance on international trade and investment law), in order to open up new possibilities for funded projects but also for defining our contribution to foundational research and through this, education.

3) Providing new themes to channel TILT's research potential

The governance team's broad spectrum of capacity and research foci is key to building our collective ability to move with change, to identify the coming challenges of regulation, and to relate technology regulation to the bigger picture globally. Within our team we are developing proposals for an access-to-justice lab, a university-wide theme on justice and equity, and innovation in standardization research, all of them with reference to global movements and trends. We have the background collectively to work credibly across diverse fields ranging from health to biometrics and fintech, and with the right staffing, have substantial potential to develop this into funded projects and new educational themes.

2. *Research themes of the Fundamental Rights and Technology team*

Researchers in the Fundamental Rights and Technology team focus on a wide array of topics mainly revolving around privacy and data protection, cybercrime and cybersecurity and the relationship between AI and fundamental rights. The common focus is, as suggested by its title, on the relationship between fundamental rights and technology. Researchers in the team approach this relationship in a twofold way: they explore the impact of technology on the existing system of fundamental rights protection, while they also explore the values and principles embedded in fundamental rights protection and the impact these have on the shaping of (digital) technologies. In this research, we approach technology, and its affordances and externalities, not only as a target for regulation, but also as a modality of regulation itself.

The European human rights framework, consisting of the protection offered under the European Convention on Human Rights (ECHR) and the Charter of Fundamental Rights of the European Union (CFEU), is one of the most comprehensive ones worldwide. It creates the general frame within which new regulation and policies are being developed and new technologies are being shaped. While the research conducted in the Fundamental Rights and Technology team is heavily embedded in academic debates, it retains a strong link to both industry and policymakers/regulators. Researchers are often invited and assigned to advise or assist policymakers in considering whether there is a need to regulate a new area or phenomenon, in proposing amendments to existing legislation, in preparing impact assessments and delivering expert opinions for proposed legislation, or in contributing to the drafting of new legislation or policy that address technological developments or responds to challenges raised by technology.

At the same time, researchers participate in collaborative interdisciplinary projects, working closely with partners from the industry. Finally, the research conducted in the team is relevant for civil society, with which several members have close relationships.

The research ideas of our team can be grouped into three major problem spaces, each of which can be associated to one of the three major lines of inquiry in the signature plan: what, who, and how of technology regulation. Within each line of inquiry, there is an overarching concern with a fundamental challenge for technology regulation. Each concern has a high level of abstraction (which is suitable for a longer-term research plan), but translates into various more specific challenges or perspectives, which will be taken up by the team's researchers in the upcoming period. Across the variety of the research topics covered by the team, we have identified the following three umbrella themes.

What: Regulating power imbalances

One of the aims of law and regulation is to address power imbalances. The development of technologies often raises new challenges for fundamental rights or significantly exacerbates known challenges; frequently, these challenges involve power imbalances, often between the state or large (technology) companies on the one hand and citizens, consumers or vulnerable groups on the other. Research in the team addresses power imbalances in three main fields: security and surveillance, healthcare and commerce.

The surveillance tools that Big Tech companies have in their hands, enhanced by AI, pose major challenges for privacy, freedom of expression, non-discrimination, and other human rights, which are in many ways more powerful than the state. The state on the other hand, retains the monopoly on legitimate violence in democratic societies, and the use of AI and data-driven technologies by the state leads to a different set of question on the protection of human rights in the domains of data protection and privacy, non-discrimination, and criminal procedural rights such as the right to fair trial.

The implementation of innovative technologies within healthcare and home-care situations takes place in the context of complex legal frameworks, such as the ones regulating personal data protection, medical devices and artificial intelligence. The convoluted maze of normative provisions – both hard and soft law – raises legal and ethical questions about the safeguarding of fundamental rights of patients and care consumers, as well as liability issues that lead to uncertainties and a possible lack of confidence to adopt the technology.

Through the increased use of smart products by citizens, both in the private and the public sphere, commercial parties are increasingly able to map and predict citizens' lives, including their conscious and unconscious actions and behaviour patterns. To allow citizens to retain part of their autonomy and the right to form and shape their own identity, researchers are exploring not only the right of individuals to prevent misuse of personal data, but also the right to be informed about and challenge the far-reaching ways in which commercial parties may predict and manipulate people's unconscious processes, desires or future opportunities or health situation.

Who: Rethinking classic fundamental distinctions in law

Legal regimes are still very much based on distinctions between the public sphere and the private sphere, between governmental agencies and commercial parties, and between public law and private law. However, in practice, these spheres, actors, and legal regimes are increasingly difficult to disentangle. Private parties are becoming more and more important in terms of technology and data processing, making both citizens and public-sector organisations increasingly dependent on the commercial parties. Many public-private partnerships are set up, meaning that roles, functions, and spheres are blending and that parties with commercial interests are asked to pursue public interests. This blurring of roles between private and public actors and the regulation of vertical versus horizontal relations is a second major theme in the research within this research team. In a variety of fields, such as surveillance, anti-money laundering, law enforcement, and transnational private regulation, the implications are researched of the blurring public/private distinction for the fundamental assumptions underlying the public law and private law.

A related but different development is that within the public sector, with its fundamental distinction between the three branches of government, the roles and responsibilities allocated to the legislative, executive, and judicial branched are also blurring. Since technology evolves fast, in often unpredictable ways, laws that aim to regulate technology necessarily have to be relatively general and open-ended, leaving considerable room for the executive to apply them and necessitating the judiciary often to make concrete choices that the legislative branch has avoided. The dynamics between making, applying, and interpreting laws is affecting the traditional system of checks and balances within the government. Researchers in the team investigate, inter alia, what this implies for procedural justice and regulating the algorithmic state.

How: Technology regulation between theory and practice

A central theme of inquiry across the range of topics explored by the team is the relationship between law in the books and law in action. While having adequate legal rules to address technological challenges is a precondition, the enforcement of these rules often turns out to be a bottleneck for effective regulation. The fact that the best regulatory framework can remain an interesting paperwork exercise is often pointed out by the researchers of the team, who therefore pay special attention to how effective and efficient enforcement schemes could be developed, and in turn, what the implications of enforcement challenges are for the drafting of legal norms.

Given the need to protect fundamental rights, command-and-control regulation in the form of black-letter law continues to be a major tool in the regulators' toolbox. However, there is a growing tendency to develop other forms of regulation and to experiment with soft law and other alternatives to traditional law-making. Private actors are developing or enforcing norms prescribed in private regulation instruments such as technical standards, certifications, and codes of conduct. The European regulators are taking note of the increasing need to rely on such mechanisms and instruments developed by or enforced by private actors and are trying to facilitate this by regulatory sandboxes or other forms of experimental regulation. In this context,

researchers investigate which traditional and new strategies (including meta-regulation and design-based regulation) are suitable for regulating particular challenges associated with technological developments. An important research topic in this regard is the development of good governance principles, including transparency, accountability, fairness, and accessibility, that aim to safeguard fundamental rights in the context of alternative or experimental forms of regulation.

3. Research themes of Competition & Innovation team

The research of the Competition & Innovation team focuses on the regulation of innovation in a broad sense, with particular attention to digital and energy markets in light of the major scholarly, policy and legislative debates in these areas at global, European and domestic level. We are faced with new sources of economic and social power in digital markets that have seen major regulatory efforts in recent years, bringing changes to the established competition and intellectual property frameworks. Similarly, the energy transition and the climate emergency require design of new policies. Researchers in the team have participated actively in advocating for such regulation and policies and are involved in studying the likely impact of new laws. Bringing energy and digital transitions together gives us the opportunity to consider synergies in how to regulate technological innovations, for example in relation to reconciling different public values and reinforcing existing regulatory techniques and enforcement mechanisms. In terms of the impact of digitization, the reach of our work spans across different sectors including energy, digital platforms, health, and agriculture.

Considering the strong links with current societal challenges, our research does not only aim to bring about academic insights but also to be of relevance for industry, policymakers, and regulators. Our methodology relies on a mix of doctrinal legal research, empirical studies, and law & economics approaches. Across the variety of topics that researchers in the team cover, three umbrella themes can be identified.

What: Regulating climate and digital innovations

Climate and digital technologies bring about important benefits for society, but they need to be properly governed to achieve their full potential and to minimize the possible harmful impact their use can create. A key challenge in digital markets is the regulation of the practices of technology companies with significant market power, while in energy markets new forms of energy generation and smart energy networks are emerging and their entry needs to be accommodated in the regulatory framework. These developments raise two sets of questions. One question relates to the effectiveness of regulation to address market failures. A second, related, question involves the impact of climate and digital technologies on different public values and interests, which all have to be recognized and reconciled.

One field where these questions are addressed by the team is in the context of the regulation of data sharing, where the question is whether the rights to exclusivity, intellectual property and data protection should be curtailed to make room for innovation and competition. Data has become an important resource in various sectors, including in energy, digital platforms, health, and agriculture that are examined in the team. While the applicable considerations are largely similar across industries, the outcome of the assessment may be different depending on the

nature of the data, the stakeholder(s) in need of protection, and the policy objective that is prioritized.

Another field of interest for the team is the liability of digital platforms for harmful content. The regulation of content moderation brings together issues in the area of intellectual property law and freedom of expression, where the introduction of the Digital Services Act creates additional mechanisms of protection to prevent the broadcasting of harmful content. Beyond this, the behavior of powerful digital platforms is subject to the competition rules that are now being complemented by the obligations contained in the Digital Markets Act. The introduction of these new legislative instruments gives rise to questions about how to interpret the substance of the new provisions and how they fit into the existing legal frameworks.

How: Future-proofing regulatory approaches and techniques

Due to their dynamic and cross-cutting nature, innovations in the various sectors of interest to our team are challenging current regulatory concepts and tools. This raises questions about whether existing regulatory approaches and techniques are still fit for purpose and how they can be made more future-proof. A central theme of inquiry that is present across the range of topics explored by the team is the extent to which existing concepts are still suitable as triggers for protection. In the area of competition law, questions are occurring about how to interpret the notion of market power for platforms whose control goes beyond the boundaries of neatly defined markets and how to interpret the notion of consumer welfare in health and other data-driven markets in light of increasing personalization. Within intellectual property law, the protection of AI-based inventions and the implementation of new institutional frameworks like the unitary patent create legal challenges that need to be addressed. In the context of energy markets, the role of the principles of good regulation in designing regulatory strategies and regulatory frameworks requires further examination.

The disruptive nature of innovation also requires a rethinking of traditional political and legal concepts like democracy, sovereignty, diversity, and inclusivity, so that these can be better embedded into the regulatory framework. For instance, energy democracy requires a transition in governance mechanisms towards communities. Similarly, the interests of democracy and sovereignty in platform markets point at the need to create a flourishing public sphere beyond the sole control of a handful of technology companies. These developments also give rise to questions about the involvement of users and other stakeholders in monitoring compliance and in designing regulatory remedies. More participatory modes of governance are being implemented in energy as well as digital markets, going beyond the traditional adversarial procedures and raising questions about how to reconcile collective and individual interests.

In the context of the regulation of data sharing, an issue of current interest is how to find a good balance between horizontal and sector-specific approaches. On the one hand, the data-driven economy will benefit from having general, baseline rules and principles in place that apply across the board. But on the other hand, certain industries will need tailor-made obligations to address specific concerns. In this regard, a relevant question is how the future EU sectoral data spaces to be created in industries like energy, health and agriculture relate to the horizontal frameworks laid down by the new EU Data Governance and Data Acts.

Who: Overlapping institutions and enforcement mechanisms

Commercial practices and policy concerns in the area of the regulation of innovation increasingly blur the boundaries between different legal regimes. Due to the rising interconnections between legal domains, regulatory institutions and enforcement mechanisms start to overlap. This can lead to useful complementarities across different levels and types of regulation, but may also give rise to frictions when enforcers clash in their interpretations or do not succeed in aligning their interventions.

The overlap in institutions and enforcement mechanisms takes different forms. One is the interaction between different levels of governance, ranging from the global or international level to the EU level and the national level. Another one is the role of standard-setting and governance mechanism beyond law. Finally, there are questions about how to strengthen synergies and minimize tensions between the activities of different regulators – for instance regarding the interaction between the regimes of competition, data protection and consumer law in digital markets as well as the role of sectoral regulators in industries like energy. These are all issues to which team members devote attention.

Annex 1 TILT researchers and topics

1. Governance Team

1.1. Negotiating social and democratic values in technology governance

Esther Keymolen: - Liability, responsibility, accountability and trust(worthiness)

The focus of my research is on liability, responsibility, accountability and trust(worthiness). The rapid developments in artificial intelligence (AI) and data-driven technologies bring forth many challenges. For instance, harm that is induced by AI technologies might not be foreseeable as the processing that takes place is typically opaque, even for the AI and ML experts themselves. Also, AI is not a 'stand-alone' technology: it operates in a network of actors (companies, users, developers, other technologies). With so many different actors steering the development and use of AI applications, assigning responsibility becomes a complicated endeavour. My research will therefore focus on fleshing out liability, responsibility, and accountability by combining conceptual analysis with legal-empirical research. By investigating how these legal concepts take shape in practice — with specific attention to bottom-up self-regulatory initiatives from stakeholders (design principles, impact assessments, codes of conduct) — and by analysing how these concepts align/conflict with other ethical values of stakeholders, in particular trust and trustworthiness, it will be possible to come to a thick conception of these legal notions.

Ronald Leenes - Techno(logy)-regulation and its failures

My research interest lies in the regulatory governance of socio-technical change, with a particular focus on the regulation of regulation by technology (techno-regulation). In a free society where regulating people's behaviour means interfering in freedom and liberty, a core question I am interested in is, when/why should regulatory intervention take place? In view of complex societies and a plurality of actors, follow up question are how can we best regulate socio-technical change and why are many efforts perceived as regulatory failure? What do we mean by regulatory failure?

Techno-regulation, as a quasi-autonomous mechanism mainly used by private actors, raises additional questions of legitimacy and acceptability.

My research focuses on a meta-level, but finds concrete applications and cases in the domains of privacy and data protection, cybersecurity and AI and robotics.

Gert Meyers - New 'innovative' technologies and publicly embedded values

As a researcher I am concerned with how (the expectations surrounding) new 'innovative' technologies affect publicly embedded values. In previous research I investigated how (expectations on) big data and (experiments with) 'behaviour-based personalisation' affects the constitution of solidarity and fairness in insurance products and services. In my current research project, 'blockchain in the network society', we investigate how expectations on and

experiments with blockchain (and potentially other distributed technologies) constitutes transformations of (rule of law) values, with a focus on transparency and accountability. I conduct my research from a Science and Technology Studies (STS) perspective, often relying on the conceptual toolboxes of Foucauldian governmentality, Actor-Network Theory and pragmatism. I employ qualitative research methods (in depth expert-interviews, case studies, field observations). I believe it is important to 'add' a meaningful layer to ANT to avoid 'just' describing the making and breaking of sociotechnical networks.

Aviva de Groot - Law as conduits of power abuse

The red thread in my work is, firstly, 'unfair treatment in, and through, uneven social power relationships' (identifying it, qualifying it, understanding what needs to be in place to prevent, repair, and fight it,) and secondly, the role of technologies in such treatment. Where previous work started from law and legal constructs as theoretically useful tools (although not always in practice), I am increasingly interested in laws as conduits of power abuse. I am specifically working on the phenomenon of legal explanation rights and what they do and do not afford in service of anti-oppressive treatment and governance. I am particularly treating the contexts of public administration and health care. I have previously worked on social robotics (in health care). I am also currently working on a project around smart technologies in football stadiums to detect 'racist and other discriminatory expression' and behavior, doing empirical research.

Merel Noorman - the governance of AI in practice

My research focuses on understanding how the governance of AI of takes shape in practice and how normative interventions can be made in these developments, with a particular focus on the architectures of responsibility. This includes conceptually and empirically exploring what kinds of governance structures and technological design could ensure the responsible development and use of technologies. I develop this line of research through: (1) The development of governance clinics. We have conducted two successful clinics in Amsterdam. We are expanding the international profiles of these clinics, starting with the Helsinki municipality. I also included the clinics in a submitted project proposal for the NWO KIC). (2) A research project for the Dutch Ministry of Internal affairs on Non-discrimination by design for AI systems. I coordinated the collaboration with the technical partners to translate the legal framework to practical design guidelines for AI. (3) Coordination of a research track in the Megamind project. I lead on the research track focused on the governance of AI in electricity systems. In 2022, I will co-supervise two postdocs on this project. (4) Coordination of the project on AI in legal systems (how to ensure fairness and justice in practice).

Tineke Broer – Regulating technologies in (mental) healthcare

In my work, I am trying to combine my background/expertise in STS, medical sociology, and psychology. In particular, I am interested in studying the ways in which technologies are used in (mental) healthcare, and the ways in which they are influenced by but also influence how we think about health and about normality and abnormality. My main concern over the last years has been how mental health care is increasingly digitalized, including by actors that are not traditionally mental health professionals, such as Facebook and app developers. My work on Facebook's algorithmic suicide prevention is one example of this. Another is the work I will be

doing on mental health apps and affective safety. Finally, I am involved in two We Care projects with the ETZ, about chatbots and decision aids – focusing on the digitalization of healthcare more generally.

1.2 Building alternate imaginaries of technology governance

Linnet Taylor - Balancing private with public technological power

My work focuses on balancing private with public technological power, drawing on Critical Data Studies, legal and regulatory theory on AI and data technologies, and political philosophy. I currently focus on three main areas: (1) conceptualising global data justice, on which I work with a team supported by an ERC starting grant, and which involves both theoretical and empirical action research (2) the political economy of AI governance globally, which I research through participant observation in legal and political fora and as part of the Sector Plan on Legal AI; (3) urban data governance, where I conduct research with colleagues from TILT and other universities on the emerging uses and problems of technology in Dutch cities. The first and third of these research lines I conduct mainly through participatory action research: a practice where goals are set in collaboration with research subjects, and where the aim is to produce findings that inform concrete change in the world, in this case by shaping architectures of regulation and governance. I work in collaboration with an extensive international network, most closely with both legal and civil society organisations in South Africa, Brazil, India and the East African region. With my team I also currently convene a network of civil society organisations from eight EU countries and the UK to research sectoral transitions and transgressions by technology firms during the pandemic, seeking to inform regulatory responses on the country level.

Joan Lopez Solano - Impacts of data-intensive systems on the fundamental rights of vulnerable communities

My research is on the impacts of data-intensive systems on the fundamental rights of vulnerable communities. Using action research methods, I work with civil society organisations and builds theory in academic debates on how the data systems used for social assistance, biometric identification systems for vulnerable migrant, and international development on ICTs can be aligned with fundamental rights and justice. My methodological background is in history and sociology, and my primary jurisdictions of expertise are Europe and Latin America.

Siddharth de Souza - Digital constitutionalism

My research seeks to pluralize arguments for how framing of digital rights, institutions, and norms can take place by engaging with different traditions of constitutional law scholarship including transformative constitutionalism and diverse epistemic standpoints. In doing so, I examine the value of engaging with the Global South as a space of contestation with multiple histories and traditions.

Within this framing, I am interested in exploring the implications that governance models have for rule of law, access to justice, and digital exclusions. I am building four strands of research: (1) the role that civil society plays in shaping data governance frameworks through campaigning, storytelling, and strategic litigation; (2) responding to new legislative/ policy frameworks worldwide that provide proposals to govern data; (3) the politics of data governance, including law and decolonization and regulating the platform economy; and (4) exploring a framework for data law that can work globally, focusing on the role norms can play in building a model for global data justice.

1.3. Legal governance of data technologies

Corien Prins - Regulating AI and digital technologies

I work on AI and digital technologies from the legal perspective, as well as chairing the WRR (national council for policy advice). I take part in research proposals such as the UvA/TiU/UU/RU Zwaartekracht collaboration on AI and public values, which has already given rise to much of the work being conducted under the Legal AI sector plan. What I try to do in TILT-time is to put issues on the agenda on the interaction of science and policy (including legal practice), among others by means of my editorials in NJB. They are not restricted to a certain domain or topic but I aim to put something on the agenda given what I come across in reading newspapers, legislative initiatives, etc. The audience for this work consists of my academic colleagues and policy makers, legal practitioners.

Maurice Schellekens - Data governance: regulating sectoral interests

My traditional core expertise is in intellectual property law and liability law. The main societal/technical domains that I have affinity with are the mobility sector (self-driving vehicles), internet intermediaries and blockchains. That said I have occasionally also written about other topics in the broad field of law and technology. Starting from my core expertise, I focus on datafication of society. Datafication reshapes relations within society and creates tensions between actors that require an answer by the law. For myself, I have structured the challenges. First, there are tensions around access and use of data. Second, there are tension in relation to the analysis of data and the use of the results of analyses. Third, there are tensions around the distribution of the benefits that data and its analysis give rise to. An example is my forthcoming publication about a power paradox in Business-to-Government data sharing in the mobility sector.

Charmian Lim - Computer scientific approaches to law

Law and language, text as data: this is the area where I am developing my expertise. Treating legal texts – judicial opinions in particular – as the data objects of my research domain requires me to deepen my understanding of judicial decision-making and hone my skills in data science in order to enable me to instruct computers how to interpret those legal texts. It is in this space

where my research focus lies. The central question of my PhD research is about how machine learning contends with legal change. Legal change occurs in various ways, but my focus is on how the court treats precedent, where legal change is embodied by the court overturning precedent, and stasis by operation of the doctrine of stare decisis, which obliges courts to follow precedent when ruling on a similar case. With this I hope to be able to reach an audience of legal scholars, technical scholars, and those who straddle the two seemingly mutually exclusive disciplines by delivering a well-reasoned argument for the value of incorporating legal notions into the design of legal AI applications, with the parallel benefit of pushing the research boundaries further towards the natural (legal) language understanding aspect of AI. With my research I also carry the hope that I can help foster understanding between disciplines by contributing to our shared language.

1. 4 Negotiating economic value with regard to technology

Panos Delimatsis - International economic regulation and the political economy of trade policy

My expertise is in the broader field of EU and international economic regulation and the political economy of trade policy. My current work focuses broadly on how economic law and informal rules shape and are shaped by iterative interactions among private actors and between private and public regulatory bodies. Currently I am interested in the forms that such interactions manifest themselves in standard-setting and the types of distributional effects that one can observe in standardization fora. I investigate the costs and benefits of various forms of regulatory governance. I am particularly interested in good governance practices, which is a horizontal theme affecting economic regulation in general. In this inquiry, I draw from work by economists and political scientists to get a better, more wholistic understanding of the interactions we observe 'on the ground'.

Out of this research in the short and medium run I hope to produce a series of papers that deal with the transformation and resilience of private authority in economic regulation and governance. In the longer run, I am thinking of bringing together various elements of my previous and current research to assemble a monograph on the resilience of private rule makers through crisis events. I also want to bring to fruition in the coming years a long-lasting book project on "trade enablers", a book focusing on rules and institutions that make trade possible.

Antonia Stanojevic - Resilience of private standard setting bodies over time and their responses to crises

I study the resilience of private standard setting bodies over time and their responses to crises. More specifically, I investigate the conditions, traits and mechanisms that contribute to resilience of such standard setting bodies. The aim of my research is to build a comprehensive theory on resilience of private standard setting bodies. To achieve this, I use qualitative data analysis in two main areas of standardization: manufacturing and finance. In the field of manufacturing, I conduct content analysis on already collected data, based on interviews with employees of standard setting bodies. In the field of finance, I use the grounded theory approach to theory building, which is based on iterating between content analysis and data collection. In line with

grounded theory approach in the case of finance standardization, future data collection and analysis are still subject to change depending on the findings of the existing data analysis, and might take the form of interviews, questionnaire surveys or both.

Konrad Borowicz - Legal regulation of finance and industry

My research examines the challenges of applying existing regulations to selected innovations in financial technology (FinTech) and the opportunities associated with application of regulatory technology (RegTech) to facilitate the regulation of the industry. In the last several years, rapid technological advancements created opportunities for a revamp of traditional models of provision of financial services. Both incumbents and new entrants are now engaged in a race to develop new asset classes, design new markets, and deliver improvements in payment, trading, and settlement processes. To these ends they employ technologies ranging from blockchain to artificial intelligence. These developments pose a challenge for the legal regulation of the financial industry but also offer opportunities to harness technology for the achievement of regulatory objectives.

2. Human Rights and Technology team

2.1. What should be regulated: power imbalances

Eleni Kosta - Data retention and national security

In my research I focus on the demystification of the (sometimes conflicting) requirements established by the Court of Justice of the EU (CJEU) and the European Court of Human Rights (ECtHR) and wish to propose comprehensive safeguards for the respect of the rights to privacy and data protection. In the context of the European Union, Article 4(2) of the Treaty on European Union (TEU) explicitly provides that national security remains the sole responsibility of each Member State. despite the repeated reference to national security in EU legislation, there is no definition of the term to be found. In its recent case law, the Court of Justice of the European Union (CJEU) has offered some clarifications on the limitations and restrictions established for national security. Both the Court of Justice of the EU (CJEU) and the European Court of Human Rights (ECtHR) have rich case law on data retention and national security.

Irene Kamara - Combatting crime in cyberspace: barriers to justice

In my research, I aim at exploring the barriers to justice both from a substantial and procedural criminal law perspective in the case of modern cyber-enabled and cyber-dependent crimes. Cyber-enabled and cyber-dependent crimes include new types of offences such as cyberstalking and cyber grooming. Those new types of crimes do not always fit the traditional criminal law offences, nor existing cybercrime legislation. The Council of Europe Cybercrime Convention penalises only offences related to child pornography and the Council of Europe Convention on Protection of Children against Sexual Exploitation and **Sexual Abuse penalises** only sexual offences against children. In parallel, in cases that legislation captures and

penalises such criminal behaviours, there are oftentimes problems with cyber-investigations such as the collection of electronic evidence and cross—border collaboration of law enforcement authorities.

Lorenzo Dalla Corte: Regulating data protection, security, and surveillance

My main research interests is how European apex courts (the CJEU and the ECtHR) deal with the (quasi) constitutionalising of the right to personal data protection. Beyond the framing of its substance and essence, I am researching the conditions that justify a limitation to the rights to privacy and data protection, and mostly *lato sensu* proportionality. Within that area, I am particularly interested in the domains of secret surveillance and national security, as they often lead to edge cases in limitations analysis in general, and have been historically paramount for the delineation of the core and boundaries of the rights to privacy and data protection in particular in connection to the above, beyond issues of legitimacy under international and super-national law, I am also interested in bulk surveillance and offensive computer network operations (CNO) carried out by states and state-backed actors from a (decentred) regulatory perspective. On the one hand, bulk surveillance and offensive CNOs highlight the regulatory capacity of technology: technology, with its affordances and externalities, is not only a target for regulation, but also a modality of regulation itself. On the other hand, mass surveillance and offensive CNOs show growing conflation between public and private operators even in areas where the boundary has traditionally been quite neat: what are the implications of the waning distinction between the public and the private in regulating security and surveillance?

Sascha van Schendel - Regulating AI in law enforcement and other state practices

My research is situated in the field of human rights and the use of AI and data-driven technologies. Themes in my research are how the use of AI and data-driven technologies alter the policy-making, decision-making and practices of various governmental actors and how regulation is/is not attuned to these changes. The focus for the regulation aspect in my research is on human rights in the domain of data protection and privacy, non-discrimination, and criminal procedural rights such as the right to fair trial. Technological developments that I focus on are the use of algorithms and machine learning in automated decision-making and profiling in all kinds of use. A specific element that combines on the one hand the technology and on the other hand the policy and practices that I focus on, is risk assessment, as the mitigation or prevention of risk is one of the driving forces behind the use of predictive analysis and large-scale data collection.

Colette Cuijpers - Regulating innovation in healthcare

I would like to carry out research regarding legal, ethical, and social compliance and acceptance of medical wearable devices and AI solutions for healthcare related problems. The development and implementation of innovative technologies within health care and home care situations

raises many legal and ethical questions. The complex legal frameworks that apply to many health care technologies – such as the GDPR and the MDR but also the proposed AI act – questions about liability issues and the quality of care can lead to uncertainties and a lack of confidence to adopt the technology, by any of the involved stakeholders, such as the developers, patients, care providers and insurers. The ethical considerations that emerge when health care is assisted by or even taken over by technologies add to this uncertainty, leading to social issues like trust and acceptance of innovative medical technologies. Also, many questions pertain to the use of medical data to develop medical technologies, as the data is often the source of the innovation, but the sharing of medical data, also for research purposes, still raises many questions in need of further research.

Taner Kuru - Regulating AI in healthcare and security

I am interested in the legal and ethical challenges posed by emerging technologies, in particular artificial intelligence. My research is specifically focused on the legal and ethical issues that arise due to the implementation of artificial intelligence in healthcare and security domains. Therefore, I am trying to answer whether the existing legal and ethical frameworks, especially that are related to the right to privacy and data protection, adequately answer the novel challenges these emerging technologies pose.

Ana-Maria Hriscu - Privacy and data protection in horizontal relations, threats to consumer autonomy

My main research project focuses on privacy and data protection law, particularly regarding horizontal relations between private parties in the digital environment. I am interested in the personal data processing practices of private commercial actors online and their overall compatibility with privacy and data protection laws, but also in the interaction between data protection and other fields of law in the online context, such as consumer and contract law, and what the interaction between legal frameworks means in practice at a Member State level for the data-subject consumer.

Bart van der Sloot - Dominance of commercial parties: Protecting autonomy vis-à-vis all-knowing companies

My research focusses on protecting autonomy vis-à-vis all-knowing companies. Through the increased use of smart products by citizens, both in the private and the public sphere, commercial parties are increasingly able to map citizens' lives and unconscious processes. This means that they are able to control and nudge citizens and have a create impact on not only their choices, but also their identity and perception of self. A problem typically associated with the affluent availability of data is that others may gain access to private information about a person. The current legal regime addresses this issue by conferring on the individual a right to withhold from others access to her private information, home and body. An equally important,

but less theorised, the problem is that the individual will be confronted with unwanted information about herself. Such information may regard her past, her present or her future. To allow citizens to retain part of their autonomy and right to form and shape their own identity, emphasis may need to be put not only on a right to prevent private data from falling into the hands of commercial parties, but also on the right not to be informed about the sometimes far-reaching insights commercial parties may have yielded on a person's unconscious processes, desires or future opportunities or health situation.

2.2. Who should regulate: rethinking classic fundamental distinctions in law

Ana-Maria Hriscu: Public-private partnerships in surveillance and fundamental rights

One of my research interests is the complex relationship between public and private sector surveillance in relation to the online context, where personal data processed by private actors is used by public authorities such as law enforcement and tax authorities. I am interested in this topic from a broader human rights perspective, as well as a strictly privacy and data protection perspective, as the use of personal data by public authorities brings with it heightened risks of conflict with human rights, such as the right to non-discrimination.

Bart van der Sloot: Dominance of commercial parties 2: The public/private distinction

My research also concerns the problem that the legal regime is still very much based on a distinction between the separation between the public sphere and the private sphere, between governmental agencies and commercial parties, between public law and private law. However, in practice, these roles, zones, spheres and parties are increasingly difficult to disentangle. Private parties are becoming more and more important in terms of technology and data processing, making both citizens and public sector organisations increasingly dependent on the commercial parties. Many public-private partnerships are set up, meaning that roles, functions and spheres fuse and that parties with commercial interests are asked to pursue public interests. This comes at the price not only of their increased information position, but may also mean that public tasks are increasingly performed by commercial parties and that parts of the public domain come under control of such parties, such as is the case, inter alia, in smart cities. These shifts may necessitate a fundamental reconsideration of how the various legal domains, actors and functions are regulated.

Bart van der Sloot: Horizontal privacy and technology regulation

I further focus on horizontal privacy and technology regulation. Although the dangers of privacy violations committed by citizens have never been off the radar fully, horizontal privacy has recently gained new momentum. That should not come as a surprise. On the one hand, the tools that enable citizens to easily collect and disseminate data about each other, such as products designed specifically for these purposes (so called spy or espionage products) and

products that offer far-reaching possibilities to do so (smartphones, drones, smart doorbells, etc.), are becoming increasingly available and accessible to ordinary citizens. Whereas in the past, such products were mainly for sale in specialised shops, nowadays such equipment can easily be obtained via Amazon, specialised websites for spy products and a myriad of Chinese online sellers. On the other hand, costs have continued to dwindle, so that economic barriers to the purchase and use these products have been removed almost completely. Both developments have resulted in a democratisation of these products. In addition to a strong quantitative increase in the possession and use of such products by citizens, qualitative changes are evident. Most legal regimes focus on laying down obligations and procedural standards that are especially apt for businesses and governmental organisations, but not for citizens processing personal data. In addition, the biggest problem privacy law currently faces is the enforcement gap. Judges, public prosecutors and data protection authorities barely have sufficient time, manpower and recourses to adequately enforce privacy and data protection standards vis-à-vis commercial and public organisations; they certainly do not have the (man)power to assess the millions of photo's, video's and other content that citizens produce about themselves and others per day. This enforcement gap is mainly due to the choice for ex post forms of regulation: technologies are seldom banned and the use of technologies is usually assessed on a case by case basis after the use has taken place. Ex ante regulation would solve some of these problems and reduce significantly the number of horizontal privacy violations. However, what makes this type of regulation difficult, is that almost any product or service can also be used for legitimate purposes, and that such usage would also be made impossible. And although ex ante regulation is easier to enforce, it still offers no guarantees; a ban on the sale of espionage products in the EU, for example, still does not preclude people from buying all kinds of products via Chinese online sellers.

Eleni Kosta: Anti-money laundering and data protection

In my research I wish to explore the challenges in the reconciliation of the AML/CFT requirements with the data protection ones and I propose ways to align them, while respecting human rights. The exchange of information between various entities is cornerstone both as regards Anti Money Laundering (AML) and Countering the Financing of Terrorism (CFT). The European AML/CFT framework entails complex exchanges of data between customers, obliged entities, Financial Intelligence Units (FIUs) and law enforcement authorities, as well as intelligence services in some cases. Traditionally, the focus in the exchanges of data for AML/CFT lies on the fight against economic crime. However, such exchanges usually encompass personal data, the protection of which needs to be respected.

Eleni Kosta: eEvidence

In my research I study the challenges that are raised by the newly proposed rules on electronic evidence in view of the rights to privacy and data protection and assess the provisions of the draft eEvidence Regulation in light of the European data protection *acquis*.The importance of electronic evidence (e-evidence) in criminal proceedings is rapidly growing. Several of the

provisions of the draft eEvidence Regulation relate to the processing of personal data. However, the General Data Protection Regulation (GDPR) and the Law Enforcement Directive (LED) are still applicable when e-evidence is concerned: processing of personal data by service providers in the context of the procedures laid down in the draft eEvidence Regulation will fall under the GDPR, while processing of personal data by law enforcement authorities for the purposes of prevention, investigation, detection or prosecution of criminal offences in the context of the procedures laid down in the draft eEvidence Regulation will fall under the LED.

Irene Kamara: Good governance principles in Transnational Private Regulation

In my research I aim at exploring horizontal and vertical safeguards and corresponding mechanisms to embed those safeguards in Transnational Private Regulation. There is an increasing involvement of private actors and private regulation instruments in the European Union public law making. Examples are found in the General Data Protection Regulation, the Network and Information Security Directive and its reform, the Proposal for AI Regulation, the Digital Markets Act. Private actors are developing or enforcing norms prescribed in private regulation instruments such as technical standards, certifications, codes of conduct, and others. The EU law makers are taking note of this increasing need to rely on tools, mechanisms, instruments developed by and enforced by private actors. It is thus quintessential that good governance principles, including transparency, accountability, fairness, accessibility, are safeguarded in Transnational Private Regulation.

Magdalena Brewczynska: Public-private partnerships in combating crime and fraud

My research focuses on the legal aspects of an important contemporary phenomenon of collaboration between the state actors and private entities in the context of sharing personal data for the purposes of prevention, detection, and investigation of crimes. The principal examples of such practices, on which I focus in my analysis, arise in the field of Anti-Money Laundering and Counter-Terrorism Financing (AML/CTF).For the most part, I explore how the states, bound by the EU Charter of Fundamental Rights and EU data protection legal framework, but also Parties to the European Convention on Human Rights, reconcile their obligation to respect the right to the protection of personal data of the individuals with the existing in fact delegation of – as one could say, at least, "quasi" – law enforcement tasks to the private parties. I attempt to identify and discuss the benefits, but also potential legal pitfalls related to the designation of tasks traditionally attributed to the law enforcement authorities and intelligence services to the private industry. Taking the need for protecting the fundamental right to data protection evinced i.a. by ensuring the legality of data processing, as the point of departure, I argue that the current EU legal framework leaves much to be desired as regards sanctioning the phenomenon at issue and providing the minimum level of legal certainty both for the public and private parties involved in the practices of data sharing and for the individuals whose data is concerned.

Paul de Hert: Regulating the algorithmic state 1: public and private actors and their interactions

My research focusses on regulating the algorithmic state. Algorithms and related technological developments as automatization, automated decision making and datafication are increasingly used to support or automate regulation and individual decision-making processes by the public administration. The emergence of new, machine-oriented socio-technical infrastructure surpassing individual human capacities has brought the administrative state to a next level. More data about reality is digitalized and make available for analysis. Not only Google and Facebook, but also states turn to data-driven policies where they act on basis of data analytics and even mold reality on basis of what the digits seem to demand ('x is suspected not because there is evidence, but because correlations say so').

But there are trends enhanced by technological development enhances that also diminish the importance of the state and have implications for security governance and human rights governance: increasing internationalization and increasing privatization. These trends imply redistribution of power empowering new forms of international actors, such as NGOs and companies.

These accelerations and trends open several lines of inquiry.

- The role of relevant actors in the ecosystem of the state to establish transparency and trust in algorithmic decision-making: both state actors (parliamentary legislator, administrative authorities and courts) and private actors (end-users/citizens and (tech) companies).

- How to understand new forms of private/public collaborations and information-sharing associations in law enforcement and anti-fraud policies. What are the interests of the states to join these collaborative practices and what benefits this entail for private actors? This ultimately leads to the question to which extent this evolution outside the traditional Trias Politica requires a relevelling of the playing field between public actors and private actors

- The involvement of private companies in fraud and welfare investigations enhances the risk of unfair, disproportionate and discriminatory treatment of citizens due to the misalignment of interests and values between public and private parties. How can public actors like the police make sure public values that are usually framing their own powers are respected with partners in the process of outsourcing

Sascha van Schendel: Data protection and data sharing in the smart energy sector

My research focuses on data protection and data sharing in the smart energy sector. In the energy sector, the use of AI in smart grids and in energy distribution is playing an increasingly bigger role, for example to predict energy supply and demand of renewable energy sources. The increased use of AI and smart technologies leads to a datafication of processes and data flows between various private and public stakeholders in the process (such as consumers/prosumers, Distribution System Operators, Transmission System Operator, technology developers and regional government). At the same time multiple legal instruments

pertaining to the data regulate which data can or cannot be shared or publicized for public interest purposes, while at the same time some data (e.g. in the public interest) has to be shared. The EU legal landscape for data sharing and use of AI is complex. The GDPR, AI Act, Data Governance Act, and the Data Act, each play a role in the relationships between the various stakeholders. Clarity is needed which actors have which obligations vis a vis data collection and sharing and vis a vis the use of AI under the different instruments. Not only are the right to data protection and instruments on data sharing important to shape the obligations and safeguards, data management is crucial to research as well to understand how the obligations from the EU regulatory framework can be applied in practice to create an innovative but also fair and transparent, smart energy distribution system.

Bart van der Sloot: Legality, procedural justice and the rule of law

I focus on legality, procedural justice and the rule of law in the context of legislative versus executive checks and balances. Laws and courts have traditionally focussed on the use or abuse of power by the executive branch. The basic question was whether the executive had stayed within the limits set out by the legislative branch and whether it used its powers proportionately. More and more, both in the European Union and the Council of Europe, emphasis has been put on the legislative branch and whether there are adequate safeguards against abuse embedded in the legal regime. In these types of cases, the ECJ and especially the European Court of Human Rights not so much assesses whether the executive branch is abusing its powers, but rather, whether the legislative branch has granted the executive power such broad powers and laid down so few limitations, that it is nearly impossible for the executive branch to violate the law, as was so with the powers transferred to intelligence agencies after the 9/11 attacks and, some argue, is a more general characteristic of legislative responses to crises. One of the clearly relevant topics in the coming years is which requirements may be set for the legislative branch and how the concepts of democracy and the rule of law should be understood when they clash.

In addition, the current regulatory regime focusses on issues of material justice and granting strong material rights to citizens. Although these issues are and will continue to be of utmost importance, perhaps the greatest legal challenge spiralled by large data-driven operations is of a procedural nature. However, the biggest gap between the current legal paradigm and Big Data is in procedural law and concerns over access to justice and principles of procedural fairness. It is hard to underestimate their relevance, as citizens who have rights but are unable to successfully enforce them remain empty-handed. The gap between the legal paradigm and Big Data as a technology impacting society is that law is primarily concerned with providing protection to the private interests of natural persons by assigning them subjective claim rights, while many of the issues tricked by large-scale data processing operations transcend the individual. A legal regime that addresses incidental data harms only on an individual level runs the risk of leaving unaddressed the underlying causes, allowing structural problems to persist. That is why procedural law may need to be de-individualized.

Paul de Hert: Regulating the algorithmic state 2: checks and balances

[see the general introduction to the same theme above]

These accelerations and trends open several lines of inquiry which I will address in my research:

- the attenuation of the classic distinction between rule-making and decision-making due to the automatic, rigid application of algorithmic rules to individual cases.

- how constitutional and other rule of law guarantees, administrative accountability and the principles of good administration should be operationalized by administrative agencies in case of algorithmic rule- and decision-making and to which extent these principles are sufficiently resilient as substantive grounds for judicial review.

2.3. How should regulators regulate: technology regulation between theory and practice

Bart van der Sloot: Data governance and the scope of personal data and privacy protection

I focus on the topic of data governance and the scope of personal data and privacy protection. The legal domain distinguishes between different types of data and attaches a different level of protection to each of them. Thus, non-personal data are left unregulated, while privacy and data protection rules apply to personal data/personal information; there are stricter rules for processing sensitive personal data (data regarding sexual orientation, race, medical condition, etc.) than for processing 'ordinary' personal data (data revealing a person's name, address, age, etc.); metadata/communications data (data about communication, e.g. when someone corresponded with whom, by which means, how long the communication lasted, where the two parties were located, etc.) are regulated differently than content communications data (data revealing what parties communicated); etc. Technological developments challenge these legal categorisations on at least three fronts. First, the lines between the categories are increasingly difficult to draw and increasingly fluid. Second, working with various categories of data works well when the category a datum or dataset falls into is relatively stable. However, this is less and less so. Third, scholars increasingly question the rationale behind the various legal categorisations, which are based on the intuitive presumption that processing non-personal data will do no harm to individuals, that processing personal data may do some harm and that processing sensitive data may do grave harm to a person; etc. This, however, is less and less so. The regulatory response to this reality so far has been either to maintain these strict legal categories all the same or to expand the scope of the concepts, e.g. including more and more data under the category of 'personal data/personal information' and/or the category of 'sensitive personal data/sensitive personal information'. It is therefore necessary to assess to what extent either of these two strategies is feasible and to what extent alternative approaches could be developed. In addition, under the privacy regime, especially under Article 8 ECHR, focus is put primarily on providing protection to personal interests of claimants. This is increasingly problematic in the age of Big Data, because large scale data processing practices often

transcend the individual and her interests. That is why it might be valuable to also take into account general and societal interests when assessing cases regarding large data processing initiatives.

Mara Paun: Developing frameworks for legal responses to socio-technical change

My research belongs to the more general field of 'law and technology'. I look at how laws and regulations should (or should not) respond to socio-technical change (i.e. technological change that alters existing conduct or makes new conduct technically possible)[1]. My current focus is on creating an analytical framework for evaluating laws in a new socio-technical context, on the basis on legal and regulatory theory. The first step is determining whether there is a mismatch between the embedded assumptions in law about how the regulated field works, and how the regulated field has changed in light of sociotechnical developments. In case a mismatch is identified, the issue of identifying the right regulatory action to establish re-connection arises. My research interests are broad, in the sense that what I am looking at can be in principle applied to any type of law, in relation to any new technology.

My expertise lies primarily in the field of data protection law, but I also have an interest in consumer protection law, as well as other fields that relate to technology. In the future, I plan to further develop my framework, but also plan to conduct more inter/multi-disciplinary work. I believe that bringing views from different fields into the framework I am developing will enrich it and the results delivered will be more insightful.

Colette Cuijpers: Responsible innovation, vulnerable groups, and harm compensation

I would like to focus my research on another element of responsible innovation: making sure responsibility is taken for harm being caused by innovations and ensuring adequate mechanisms are in place to effectively restore or compensate such harm. A specific development I want to keep an eye to in my research, is the so-called WAMCA-act that only recently allows for representative organisations to claim monetary damages in a collective action in the interests of an unnamed group of claimants in the Netherlands. In my research I want to further conceptualise the interrelation between responsibility, accountability and liability in innovation processes. Accountability and transparency can assist in identifying where and how to place responsibility and liability law can help in the process of redress in case harm occurs. I want to focus on the relationships between the different stakeholders, including technology as a non-neutral actor, and to analyse how responsibility, accountability and liability can mitigate power imbalances that may exist or may arise between the different stakeholders in innovation processes.

---

[1] Lyria Bennett Moses, 'Recurring Dilemmas: The Law's Race to Keep Up With Technological Change' [2007] SSRN Electronic Journal <http://www.ssrn.com/abstract=979861> accessed 23 November 2020.

3. Competition & Innovation team

3.1 Competition

Jasper van den Boom - Competition policy and market regulation concerning digital platforms

My research focuses on competition policy and market regulation concerning digital platforms. The research consists of a law & economics study that applies economics literature on network industries and the concept of natural monopoly to modern digital markets as to draw lessons for their regulation. In my research, I argue that certain categories of digital platforms exhibit the characteristics of a natural monopoly in their market and that this plays an important role in the emergence of digital ecosystems that span across a multitude of markets. In my research I examine how the platform's natural monopoly position allows it to leverage its market power to adjacent markets, how this results in cross-market dominance and how this inspires competitive strategies. I also examine the harms to competition and foreclosure effects associated to these phenomena. The contribution of my research lies in recommendations on regulating cross-market power that is exerted as a result of the platform's natural monopoly status. These recommendations help to develop a regulatory framework that regulates activities at the ecosystem level as to curtail the power held by the natural monopolist in the markets where they are dominant and adjacent markets.

Damien Geradin - Adequacy of Competition Law in platform and IP-led markets

I study a range of industries to test how the existing competition law framework is up to the task. In particular I focus on platform markets, the relationship between dominant players and new entrants and the role of disruptive innovation. It also focuses on markets where patents shape market relations when these are essential to standards. Competition agencies are facing new and increasingly complex commercial practices and the research contributes to identifying how the competition law regime can be enhanced.

Inge Graef - Legal consistency of competition law and regulation in digital markets

I explore how competition law interacts with existing and future regulation in digital markets. Digital markets give rise to practices that create harm going beyond considerations traditionally associated with competition law. The relationship of competition law with a selected number of other fields (including data protection, consumer law, Digital Markets Act, Data Act) is analyzed through the lens of objectives or interests that are now becoming relevant to competition enforcement, such as autonomy and economic dependence. I aim to identify ways to balance competition and other regulatory interventions to protect such notions. The parallel application of legal regimes is not necessarily a problem, but can create useful complementarities when sets of rules target different concerns or protect different values and when tasks for enforcement can be divided among the competent authorities and courts. However, with the EU and national

legislators as well as regulators becoming increasingly active in digital markets, the risk of inconsistencies between legal frameworks is rising. This can create problems of legal certainty and may lead to either under- or overregulation due to the fragmentation of the regulatory framework. I explore how to maximize synergies and minimize the risk of tensions and inconsistencies.

Giorgio Monti - Digital markets in shared regulatory space

I draw on new economic findings that help understand how digital markets work and test how far the current regulatory toolbox addresses the market failures. I test the hypothesis that these new forms of market failure lead to substantive or procedural changes in the manner regulatory agencies carry out their work. For example certain digital markets may be understood better as 'attention markets' and this configuration has effects for the design and application consumer, competition, data protection and media regulation. I show how these actors interact and propose means for facilitating improved coordination. To date, I have focused on the institutional design of regulatory bodies in general and specifically addressing the institutional design under the Digital Markets Act. Moving forward, I hope to develop further work on how to regulate digital markets by exploring options for new methods of regulation (e.g. sandboxes and responsive regulation) and also addressing questions about the role of courts in shaping and controlling regulatory efforts.

3.2. Energy and infrastructure regulation

Leigh Hancher - The Rise of 'Shadow Law-Making' in the context of European energy market regulation and market design

I study the phenomenon of shadow law making which raises questions about its effectiveness, accountability and the relationship among actors involved. The concept of Shadow Law-Making refers to the heightened powers of the Agency for the Cooperation of Energy Regulators (ACER) together with market players to adopt binding prima facie technical regulations – known as 'terms and conditions and methodologies'. These regulations can have important economic impact but their adoption is not subject to ex ante scrutiny – putting a heavy burden on ex post control by the ACER Board of Appeal (B of A) and eventually the European Courts. A growing number of appeals are now being lodged before the B of A and are expected to result in further appeals to the Courts over the coming years.

Laura Kaschny - Energy justice in EU energy law and its role in accelerating the energy transition

My research focuses on energy justice in EU energy law and its role in accelerating the energy transition. As an emerging concept of social sciences, energy justice aims to define what a just and equitable energy sector encompasses. This research analyses the extent to which the

notion of energy justice and its underlying values are reflected in the energy acquis and Article 194 TFEU as the key energy provision of EU primary law. Considering the increasing transitional character of energy regulation, my research further analyses to which extent the changing roles and responsibilities of the main energy market participants affect energy justice in the EU. This not only includes ensuring that actors such as distribution system operators (DSOs) step up as neutral market facilitators, it also raises questions of democratic legitimacy between decision-making processes of the EU, national governments and the independent national regulatory authorities (NRAs). As part of the Neon Research project, this research stands in a constant exchange with other work packages including electrical and mechanical engineering as well as social and innovation sciences.

Saskia Lavrijssen – Strategies to facilitate the energy transition

I specialize in EU law, competition law, economic regulation, energy law, data protection law, national constitutional and administrative law and issues of good market supervision and regulation. I have investigated which type of governance mechanisms, institutions and regulations help to promote a secure, affordable and sustainable functioning of crucial infrastructure sectors such as the energy, water and transport sectors. Currently I investigate which regulatory strategies and regulations should be adopted to accelerate the energy transition in a just way, focusing on the issue of system integration, empowerment of prosumers, data protection law and the role of new technologies such as hydrogen and virtual energy storage. One pillar in my research deals with the challenge of European and national energy laws to create stability and predictability for the market players on the one hand and to be flexible enough to stimulate and accelerate innovation and facilitate a system integration approach on the other hand. Strong governance structures with transparent responsibilities for the ministries involved, the independent regulator, the system operators and clear procedures for the coordination of infrastructure investments will be key to make the energy transition a success. A second pillar in my research analyses from a legal perspective the concept of Energy Justice and investigates how this concept can guide policy makers and energy regulators in making fair energy transition policies and regulations. A third pillar links artificial intelligence research to innovation in legislation and regulation to accelerate the energy transition in a fair and legal way.

Leonie Reins- The regulation of low-carbon technologies in the energy and environmental sector

I try to address the question which principles, rules, and governance processes should be embedded in European Union ("EU") law to address the current and future challenges relating to the development of new technologies in the energy-supply and environmental sector in my research. I focus thereby on the theoretical perspective ((what role do concepts such as energy democracy, energy justice, and climate justice play, and are these concepts helpful in

navigating the on-going energy transition?;do concepts such as net-zero and specific emissions reduction targets risk jeopardizing EU energy security, and is more flexibility needed in light of recent geopolitical developments?), the governance perspective (trying to answer at the global and European level, how do global norms aimed at addressing climate change and the freedom of EU member states to determine their own energy-mix interact, and what role does the (emerging) principle of energy solidarity play in this regard?), the market perspective (what novel forms of market regulation are needed for the effective implementation of energy communities, and do the legal frameworks of EU member states currently provide for sufficient flexibility to accommodate them?) and lastly also a product and technology regulation perspective (are principles such as the precautionary principle and a (potential) innovation principle helpful in devising product and technology regulation that fosters the development of new low-carbon and climate-friendly technologies?)

Shakya Wickramanayake - Protection of public interests in the infrastructure sectors in the digital age

Shakya is performing legal empirical research in the area of economic regulation and the protection of public interests in the infrastructure sectors in the digital age.

Shakya is involved in the VIA AUGUSTA project as a PhD researcher. The VIA AUGUSTA project will assist the Dutch infrastructure sector in the adoption of a System of Systems approach, through research on effective IT governance (ITG), inter-organizational governance (IOG) and regulatory governance (RG) frameworks. As part of the project, Shakya will assist in uncovering the theoretical foundations of a broad welfare and SoS approach in the infrastructure sectors, and establishing how public values and governance principles will apply to infrastructure operators under a broad welfare approach.

3.3. Regulation of data sharing

Can Atik - Governing Agricultural Data and European Agricultural Data Spaces

I study the main challenge who has which rights on which type of ag-data that limit the full potential of the emerging digital agriculture sector. Data-driven insights thanks to IoT technology and advanced algorithms guide farmers to make precise decisions that reduce costs and increase operational efficiencies in various ways. Despite the promising provisions in the Data Act that may relieve some of the problems, especially from the farmers' side, there are open questions that need to be addressed. One is *whether the remaining issues after Data Act should be addressed by a sectoral regulatory intervention* and another is *how to design governance and technical model of the European Agricultural Data Space*. These two questions are presented separately, but they should be taken into account altogether to ensure smooth and functional sectoral data governance in Europe. To address these questions I research the perspectives of various policies including Common Agricultural Policy, food safety and traceability regulations, public, animal and plant health/welfare, or environmental policies.

Therefore, there might be inter-disciplinary collaborations to generate holistic evaluations. From a mere competition policy perspective, allocation of access rights still constitutes importance, especially for third party access to ag-data that may un-lock innovative initiatives in the various levels of farm to fork chain. Also, compliance with Article 101 TFEU when designing sectoral data space was raised several times in the EU workshops. In this regard, my future research may focus on these particular issues.

Brenda Espinosa Apráez - Data-driven innovation in the digitalized utilities

My PhD research investigates the legal challenges brought by data-driven innovation in the digitalized utilities, zooming in on the complexities of regulating data sharing in light of the issues that emerge from the mesh of policy objectives, actors and interests therein involved. With the help of digital technologies such as sensors, smart metering, smart grids, and data analytics techniques, infrastructure managers in the utilities sector can obtain improved and (near-to) real-time data about the functioning of the networks they manage and about the usage of utilities. The data collected by the infrastructure managers in those sectors is of strategic value not only for them, but also for actors in the same sector and beyond, who need these data to provide their services and/or develop innovative products. These developments raise questions about how to properly govern data.

I will build on this research for my involvement in the MEGAMIND project. The project aims at developing a technological, legal and ethical framework to facilitate the use of AI advances in local energy systems in order to prevent overloading the network and to link supply and demand in a smart way. From a legal and ethical perspective, two broad topics are crucial to develop such framework: data governance and the responsible use of AI. Developing a framework for data governance and the responsible use of AI in the context of the MEGAMIND project requires mapping out and analyzing how different (horizontal and sectoral) legal frameworks governing data (sharing) and AI interact, and how principles such as fairness, transparency and responsibility can be incorporated by actors of the electricity market.

Tjaša Petročnik - EU governance and regulation of health data

In my PhD project, I explore EU governance and regulation of health data. In particular, I focus on sharing of health data in the context of 'big tech' platforms' increasing role in healthcare; a development taking place in parallel to policy initiatives aiming to make "Europe fit for the digital age". I explore in what way can EU competition law and economic regulation respond to such disruptions, by examining the questions on conceptualizing market power in data and ways in which the practices and market values of 'big tech' companies interact with values and objectives associated with the pursuit of health.

Thomas Tombal- Protection of autonomy in a data-driven society

My research focusses on the protection of autonomy in a data-driven society. On the one hand, this involves addressing the ever-growing power of large digital platforms, on whom more and more business users are dependent. In this context, I study whether the rules of competition law and the new regulations aiming at creating more fairness and contestability on the digital markets (e.g. the Digital Markets Act) are sufficient to address this issue. On the other hand, this involves exploring how the EU legal framework can contribute to the empowerment of individuals and small businesses through greater access to data and data sharing. In this regard, I study how existing (e.g. the GDPR or sectoral legislations) and future (e.g. the Data Act) legislations can contribute to this objective. Importantly, I attempt to demonstrate in my research that it is fundamental to look beyond the short-term gains that such data sharing initiatives could create for these individuals and business users, by also considering the long-term and collective risks for the autonomy of (other) individuals of such initiatives, which derive from asymmetries of information, from the relational and collective nature of data, and from the negative externalities implied by data sharing. Finally, as I am more and more preoccupied by the daunting environmental and climate change challenges that our society faces, I am also starting to explore whether data sharing could contribute to addressing these challenges and to the transition towards a more sustainable world.

3.4.Intellectual property

Lisa van Dongen

My PhD research starts from the premise that one size does not fit all. From a law and economics perspective, it focuses on patent enforcement in Europe in the software and transcatheter heart valve industries. I look into the different interests involved, their weighing by courts in infringement cases, and the existence and use of flexibilities in deciding upon granting final injunctive relief or damages and their form. The EU's and UPC legal frameworks are explored, as is national enforcement in Germany, England and the Netherlands. I seek to establish why flexibilities are not or barely used by looking into potential constraints in the (case) law, literature and interviewing legal practitioners from these countries on procedural conditions and practices. Furthermore, using economic efficiency and distributive (justice) preferences, I attempt to map the potential and limitations of flexibilities in judicial enforcement.

Paul Halliday - Platform regulation with respect to IP

Currently I am researching platform regulation with respect to IP, in particular copyright. This is the broader stage, however, I am particularly interested in how differences between business models and industries highlight particular difficulties to a "one size fits all approach" to platform enforcement of copyrights. This is the current approach represented by the Digital Single Market Copyright Directive, and Article 17 in particular. Over-enforcement, as well as under-enforcement, have been said to undermine the legitimacy of copyright, which forces us to consider ways in which we might need to change or adapt the current copyright framework.

Sunimal Mendis – IP protection in the digital age

My research combines 5 lines of enquiry. Firstly, I research the interface between IP rights democracy, diversity and inclusivity. At the EU and international level, there is a great deal of interest in evaluating the IP law framework in relation to its ability to promote democratic values such as diversity and inclusivity. This is linked with the ongoing discourse on IP, human rights and ethics. There is scope for interdisciplinary research here with sociology, anthropology and political science. Secondly, I research IP rights enforcement on online platforms: Shaping the IP law framework on intermediary liability. This debate was brought to the forefront with the enactment of the CDSM Directive (2019). The proposed DSA has added fresh impetus as well as the decisions of the CJEU in the *Youtube/Cyando* cases. Many sub-topics for my research are encapsulated within the broader theme: IP enforcement and its impact on fundamental rights and due process; Changing definition of the communication to the public right; Distinction between passive/active intermediaries; The national legal frameworks on secondary liability. Thirdly, I focus on IP and data protection. The debate mainly focuses on the role of IP rights as barriers to data re-use and data sharing, especially in the development of new technologies such as AI-based applications. It came to the forefront with the enactment of the CDSM Directive (2019) and it sustained in the light of the proposed Data Governance Act. The issue of

data as a public good is a sub-topic within this theme. Fourthly, I research IP and AI-based inventions and creations. This has been an ongoing debate for some years but is as yet unresolved. Main questions include: *Who should be considered an author/inventor of an AI-generated creation or invention? Should AI-generated creations or inventions be subject to IP protection or should they be relegated to the public domain?* Lastly, I focus on IP in the Metaverse. This is an emerging topic that involves the role of IP rights and regulation within the meta-verse. Involves issues relating to the interface between IP rights, intangible assets (e.g. NFTs), smart-contracts etc.

3.5 International economic law

Léo Gargne - Sustainability in Free Trade and Investment Agreements

My area of expertise and field of interest lie at the intersection of international economic law (both branches: international trade law and international investment law) and other non-economic issues, such as environmental concerns and more generally sustainable development. That most notably includes climate change, but not only. This intersection and the friction that can be observed between these different fields and interests certainly constitute a very active area of research at the moment. My own PhD research relates to these questions; more specifically my analysis focuses on the way international economic treaties, i.e., international trade agreements (referred to in my research as Preferential Trade Agreements, PTAs) and international investment agreements (IIAs) incorporate such environmental concerns.

Olga Hrynkiv - Intersection between international economic law and national security

My research explores the intersection between international economic law and national security. Since governments strive to preserve maximum discretion in taking unilateral actions to protect their security, most international economic agreements incorporate "so-called" security exceptions that allow contracting parties to unilaterally derogate from their trade and/or investment commitments when their national security is at stake. Amid intensifying competition between major powers for technological leadership and new geoeconomic threats, certain states have recently expanded the use of their export control regimes, economic sanctions, weaponized tariffs, and extensive investment screening in the national security interests. My research examines (1) whether the current texts of security exceptions clauses under different treaty regimes reflect the emerging concerns of the international trade community; (2) which role international adjudicators and institutions involved in governing economic and security policies play in effectively striking a balance between the protection of national security and international legal responsibilities; and (3) how international law can be better equipped to provide a satisfactory level of coherence and control while addressing states' security concerns.

3.6. Standardization

Stephanie Bijlmakers - Changes and challenges in the regulatory governance of manufacturing in times of COVID 19

I examine theoretically and empirically how private and/or hybrid standard setting bodies (SSBs) have dealt with the pandemic, and how they have endured and ensured a continuant central rulemaking role because, and despite, of it. The global economy took a hit with the spread of COVID 19. This coronavirus pandemic shook up the existing polycentric regulatory systems and public/private dynamics across the different areas of manufacturing, and exposed the deficiencies in existing regulatory regimes in preventing and mitigating its adverse socio-economic effects. The empirical research for my research will focus mainly but not exclusively on the Initiative for Responsible Mining Assurance (IRMA), a global certification program in the mining sector that has demonstrated an adaptive capacity in dynamically responding to challenges posed by COVID 19 and related pressures from within and outside the organization. Alongside innate features of SSBs that can explain an SSB's adaptive capacity, it is important to give consideration to how much of an organization's evolution is attributable to contextual elements. I therefore also address the question how the pandemic and relating (sector specific) contextual factors have affected the margin of autonomy of SSBs to assert their right to rule.

Shanya Ruhela - Transnational private regulation and financial standardization

My PhD research aims at understanding lobbying by associations that represent interests of banks at the transnational banking standard-setter, i.e. the Committee, after the Crisis. It is motivated by how banking regulation changed substantially after the financial crisis of 2007-08 ("Crisis"). Along with major domestic regulatory changes, standard-setting and regulatory bodies at a transnational level were urged to develop a new set of regulations aimed at maintaining financial stability. Perhaps most prominently, the Basel Committee on Banking Supervision revised its banking regulatory standards and promulgated a new set of standards, i.e. Basel III. Historically, the banking industry is said to have exerted influence over relevant regulations through lobbying, both at the level of their national policy-making and at the level of the Committee. The Crisis has been, partly, blamed on lobbying and the resultant regulatory capture of the financial regulations. Albeit increased awareness and criticism of the existence of regulatory capture and aggressive lobbying in the wake of the Crisis, the process of exerting influence over regulations through lobbying did not disappear from policy-making.

Zuno Verghese - ICT SDO 's adaptability and resilience to internal and external changes

My PhD research investigates how an ICT SDO has remained relevant and developed its adaptability and resilience to internal and external changes such as internal calls for reforms, egal decisions, legislation and regulatory pressures and enforcements, and competition from claimants to the central rule making role of the SDO in a given technological field. The expected

effects include reforms to the procedures, modus operandi of decision making for the development of standards and specifications, and internal norms on governance. I explore several topics in my research, namely the Global Challenges and Industry Oriented Nature of ICT SDOs; Participation and Decision Making and Development Oriented + Resilience.