

Understanding the Mutual Shaping of Regulation, Technology, and Normative Notions

TILT Research Programme 2014-2019

version 1.0

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This document describes the research programme of the Tilburg Institute for Law, Technology, and Society (TILT) for the period 2014-2019. It is intended for our peers – academic researchers in the field of law & technology and related fields –, for academically-oriented people with an interest in technology regulation, and internally for TILT to guide the strategic decision-making in our research. The research programme is a continuation of the 2008-2013 programme, since the overarching framework and research question prove to function well to guide research in the field of technology regulation over a longer period. Thus, the general framework of the programme sketched in the first part is, with small adaptations, the same as in the previous programme. The second part, however, differs from the previous programme: instead of a description of concrete sub-projects, it lists a set of strategic research indicators, which fits better in the type of research programme we envision.

TILT's vision is that a research programme should facilitate strategic decisions in the context of research, for example which topics, research questions, or research projects to embrace, and how to foster academic culture, rather than describe or prescribe in detail the type or content of research to be conducted. Hence, we opt for a helicopter-view research programme that is broad, overarching, and flexible. Such a programme allows a flexible approach that enables us to develop research questions and projects that fit within the overall framework of the research programme along the way. The reasons for adopting this approach are threefold.

- New technological developments and new knowledge on the opportunities and side-effects of technologies will emerge during the time period covered by the programme.
- TILT is a dynamic institute that changes its composition to a lesser or larger degree over a six-year period.¹ We value the importance of following individual researchers' research interests and lines, and thereby allowing them to develop their own research lines and projects within the boundaries of the overall framework of the research programme.
- Our research partly relies on fundamental-research funding by Dutch and European funding schemes; thematic calls for proposal and allocation decisions may provide unanticipated opportunities to explore new research questions.

While the helicopter-view character of the research programme allows for a flexible and topical development of concrete research, we apply several strategic characteristics that serve to guide our research, in terms of content, form, and organisation. These are listed below in section 2. Before describing the strategic research characteristics, this document first explains the general context, scope, and focus of our research.

1. Context, scope, and focus

The research focus of the Tilburg Institute for Law, Technology, and Society (TILT) is technology regulation. Historically, it focused first on the consequences of informatisation on law and policy (1998-2003). Then, from 2004 to 2008, the research endeavoured to identify building blocks for a framework of technology regulation, based on research in the fields of information and communication technologies (ICT) and, to a lesser extent, biotechnology. What these programmes have clarified is how new technologies raise complex challenges for regulators, both as an object of regulation and as an instrument for regulation. These challenges involve, inter alia, achieving normative legitimacy (congruence with some broadly shared moral positions), regulating in a globalising world with many centres of power (polycentric governance), ensuring effectiveness and legal certainty in the face of rapid technological change, and benefiting from the potential of new technologies as a regulatory instrument.

More specifically, what these research efforts have established is that building blocks for a general framework for technology regulation are difficult to identify in the abstract. Not only is each particular regulatory problem context-specific and technology-specific, but also, no generic starting point(s) can be articulated that guide the solution of these problems (Koops et al. 2006; Koops 2010). This is because technology, regulation, and normative notions interact, i.e., they continuously adapt to new technological, regulatory, and/or normative environments, and in this process, they mutually shape one another. By way of illustration, privacy legislation influences technological developments, but at the same time will be adapted in light of such developments. Moreover, the normative gist of privacy underlying this legislation is itself influenced by developments in technology and regulation, for example, through the way in which society interprets the fluid normative concept of 'reasonable expectation of privacy' in light of technological (e.g., mobile phone cameras) or social (e.g., social-network sites) developments. In other words, privacy regulation, privacy-affecting technologies, and the normative notion of privacy interact, in a process we will indicate with the term 'mutual shaping'.

The 2008-2013 and the current 2014-2019 programmes aim to extend and deepen the lessons learnt from the previous research programme by further developing context-specific theories regarding technology regulation. At the same time, the programme extends the scope of TILT's research by placing specific developments in a broader scope. It aspires more systematically to focus on the mutual shaping of regulation, technology, and normative notions. Technology regulation cannot simply be extended from existing regulation or based on fixed normative notions, because neither regulation or technology nor normative notions are set in stone. Regulators who aim to pursue effectiveness, efficiency, and legitimacy of technology regulation will need to factor in the dynamic and interactive character of regulation, technology,

¹ In principle, research programmes have a duration of five years. Since in practice, research programmes build on previous ones and tend to develop organically, TILT's research programmes cover six-year periods with one year overlap with the previous programme. Thus, the current programme would normally have covered the period 2013-2018, overlapping with the last year of the previous programme. However, since a new Standard Evaluation Protocol for 2015-2021 was being developed in 2013 and published only in March 2014, the current programme was drafted in 2014 and effectively starts later, thus covering the period 2014-2019.

and normative notions. However, the complex interactions at work in the mutual-shaping process are yet little known, which hampers technology regulation both in theory and in practice.

Against that background, this research programme aims to enhance the understanding of the mechanisms at work in the mutual shaping of regulation, technology, and normative notions. In other words, what are the processes underlying the interaction of legislative and other rules, concrete technologies, and norms, values and fundamental concepts? When and why do new rules or technologies arise, when and how does the gist of normative notions change, and which variations of rules, technologies, and normative notions persist? In this respect, the current programme can be said to be more descriptive in nature than the 2003-2008 programme, which was in some respects more normative or design-oriented.

The overarching research question therefore is:

Which mechanisms are at work in the mutual shaping of regulation, technology, and normative notions, and how can insight in these mechanisms be used to provide recommendations for technology regulation?

To clarify this research question, we first explore its core elements. The question comprises five key concepts: regulation, technology, normative notions, mutual shaping, and technology regulation.

Regulation is a complex concept. There appear to be three broadly accepted understandings of what 'regulation' is (Black 2002). In the first, regulation is the promulgation of rules by government accompanied by mechanisms for monitoring and enforcement, usually assumed to be performed through a specialist public agency. The second assumes regulation to be any form of direct state intervention in the economy, whatever form that intervention might take. The third one takes regulation to be all mechanisms of social control or influence affecting all aspects of behaviour from whatever source, whether they are intentional or not. We adopt Julia Black's decentred conceptualisation of regulation, which moves beyond the state as the sole regulator and which includes other modalities of regulation. Regulation, then, is 'the sustained and focused attempt to alter the behaviour of others according to standards or goals with the intention of producing a broadly identified outcome or outcomes, which may involve mechanisms of standard-setting, information-gathering and behaviour-modification' (Black 2002: 26; 2005: 11).

Our primary focus is on regulation in pursuit of public regulatory goals, which will often imply regulation by public regulatory bodies, which may of course involve the mobilisation of private actors, civil society, and public-private partnerships. Three dimensions of regulation are distinguished:

1. the substantive, which encompasses regulatory targets and regulatory goals, as well as the substantive values that inform regulation;
2. the procedural (procedural values underlying regulation, such as procedural justice and adequate checks and balances) and institutional (which we broadly define as any social pattern characterized by standard sequences of interactions (Jepperson 1991));
3. the instrumental, in particular the four modalities of regulation – law, social norms, market, and architecture (Lessig 1999) – and the specific forms in which these modalities can be applied.

Technology refers to the broad range of tools and crafts that people use to change or adapt to their environment. Our research focuses particularly on new and complex technologies. 'New technologies' are defined as any set of productive techniques which offers a radical improvement (whether measured in terms of increased output, savings in costs, or qualitative difference in potential use) over the established technology for a given process in a specific historical context. New technologies often provide challenges for regulators, and complex technologies are – even more than technology in general – normative rather than neutral, as they are developed in organisational contexts involving various legal, social, and ethical institutions. ICT forms the most prominent technology to be studied, not only in itself but also in relation to other technologies, such as biotechnology, neurotechnologies, and robotics, of which ICT is a key enabler.

A **normative notion** in the context of this research programme refers to a normative standard by which individuals and communities determine how best to live their lives. Such standards serve, in theory and in practice, as important touchstones for technology regulation. In the field of law and technology, normative standards—taking the form of norms, values, rights, or fundamental concepts—frequently referred to include the public interest, security, innovation, health, safety, risk, privacy, data protection, non-discrimination, freedom of expression,

autonomy, self-development, property, identity, and transparency. The meaning ascribed to these notions and their function in regulatory debates or decisions often depends on the particular context in which the notions are used.

Normative notions are frequently grouped together into a more or less coherent set, often based on fundamental, explicit or implicit, ontological or deontological assumptions about humans, society, and the world; this can be called a normative framework. A normative framework binding together various normative notions may take the predominant form of traditional ethical frameworks, such as utilitarianism, Kantianism, or communitarianism, but also of modern Western-liberal paradigms of human rights or democracy. However, the conception of normative frameworks does not assume that individuals and communities understand or limit their normative perspectives to neat ethical or legal-political frameworks. Instead, this research programme starts from the premise that we are rarely aware of all the different underlying normative notions that we use to orientate and regulate our lives, such as individual autonomy, the public interest, human dignity, distributive justice, or property. The rights, values, principles, and norms that feed and interact with technology regulation may coincide with a clear-cut ethical or legal-political paradigm, but in practice, technology regulation often takes shape in interaction with an irregular mix of normative notions associated with different normative frameworks. To understand the normative aspects of technology regulation, we therefore must be aware not only of relevant normative notions but also of the various normative frameworks that play a role under the surface.

The concepts of normative notions and frameworks taken up within this research programme also allow us to understand the different sub-systems within a given society, such as the law, as being based on fundamental (and often implicit) assumptions, which affect how broader normative perspectives and the individuals and groups that subscribe to them interact with a particular sub-system. Principles such as transparency or autonomy may be fundamental elements of European legal systems, but they do not necessarily form part of the normative frameworks of particular European sub-communities or of other communities around the world. Also, while human rights as listed in the various European and international catalogues of rights often function as normative landmarks, we do not assume that human rights are the cornerstone that keeps all normative frameworks in place; rather, they frequently act as a mask for more deeply-rooted values and normative perspectives. In sum, the phrase 'normative notions' denotes an interest in the many and varied normative perspectives that develop, interact, compete, and conflict within our multicultural societies and in our globalising world.

It is **society** or a social system within which this mutual shaping of regulation, technology, and normative notions takes place. A social system refers to the relational system of interaction among individuals and collectives. The way technology develops in a particular social system might differ from its development in another social system, not only due to different normative notions or regulation, but also to the different social movements and the confrontation between the various social agents within the different societies or social systems. Society can be perceived as a seamless web: there are no *a priori* scientific, technical, cultural, political, legal, or economic factors explaining actors' behaviour. The combination of all these factors and social actors within a social system provides the context in which the mutual shaping of regulation, technology, and normative notions takes place.

Thus, the focus of TILT's research is the interplay of regulation, technology, and normative notions – which is what we call the "TILT triangle" – within a social context.

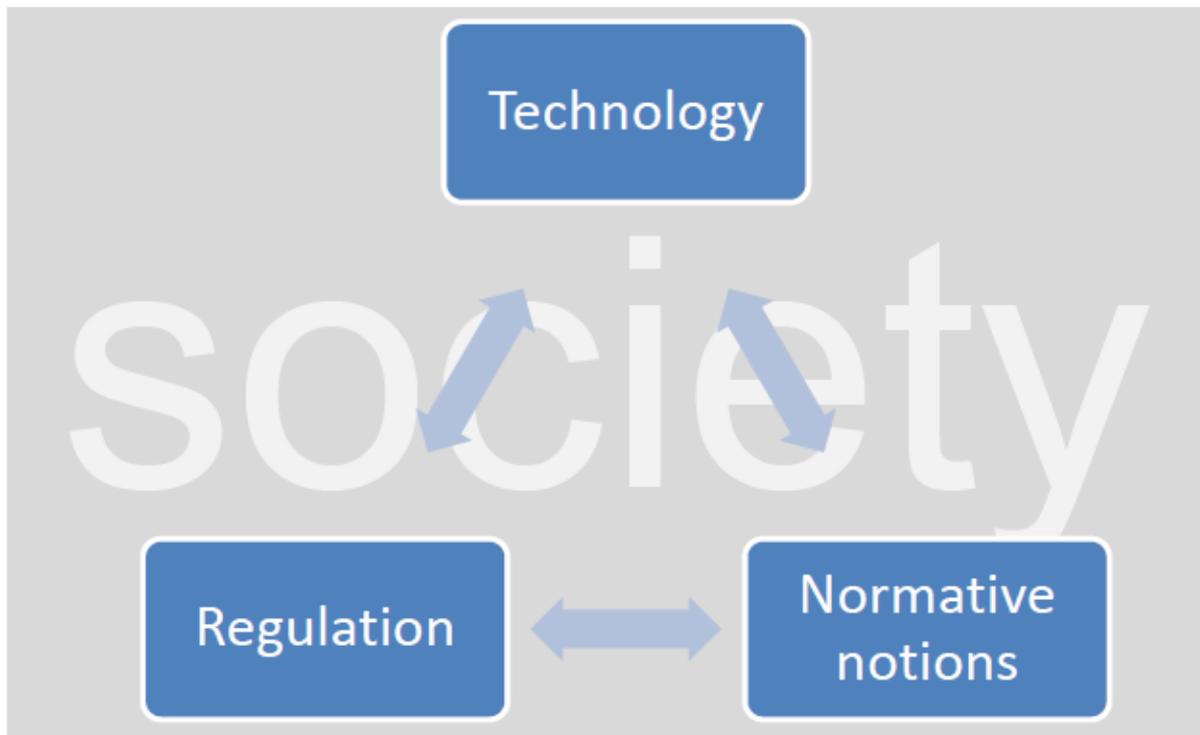


Figure 1. The interplay between regulation, technology, and normative notions in the context of society

The mutual-shaping perspective argues that both the innovation stages of technological development and the diffusion of technology within society should be viewed as one continuous, dynamic process, in which social, economic, moral, legal, and political factors help shape the technology's trajectory of development. At the same time, however, these factors are also themselves affected by the technology's coming-into-being. The mutual-shaping perspective assumes that there is a fundamental interdependence between social, technological, and normative transformations, in an ongoing process of socio-technological change that is dynamic and open-ended, and that occurs in the context of a specific time and place (Boczkowski, 2004). The mutual-shaping perspective is inherently multidisciplinary, aiming at uncovering a wide array of factors relevant to socio-techno-normative transformations, e.g., legal, ethical, social, political, and technological ones. In light of this complex interdependency, we consider such a multidisciplinary perspective not only justified but also necessary for attempting to understand the mutual shaping of regulation, technology, and normative notions.

The adoption of a mutual-shaping perspective allows us to dynamically study the interaction of regulation, technology, and normative notions. Modern-day technological inventions borrow from a wide variety of technological and scientific domains, build on earlier technologies, and are often quickly displaced with newer technologies. Dynamism in socio-technological change is a fundamental characteristic of the mutual shaping of regulation, technology, and normative notions.

Finally, technology regulation is an umbrella term for two types of regulation: regulation of technology and regulation by technology. Regulation of technology means the attempt to alter the behaviour of people in relation to this technology, for example, prescribing how robotics applications can be developed, marketed, or used. Regulation by technology (also called techno-regulation) means the attempt to alter the behaviour of people by using technology, for example, mandating the use of tachographs to prevent truck drivers from speeding, or website filtering to prevent children from accessing harmful content. Regulation by technology raises questions regarding legitimacy and effectiveness because of the actors involved, the opacity of norms, and the relatively deterministic nature of enforcement of techno-regulation. Of course, both types of regulation can coincide, when a technology is regulated by means of that or another technology.

The interplay between regulation, technology, and normative notions can be studied in different ways. For the purposes of generating research questions, it is useful to look at the interplay of technology with regulation and normative notions. This is because it is technology that

distinguishes our research programme from other legal research programmes, and technology thus informs the context in which questions about technology regulation are asked. Taking technology as the lens through which we look at the mutual shaping of regulation, technology, and normative notions, we can place different emphases, resulting in different ways in which the mutual shaping can play out (see Figure 2).

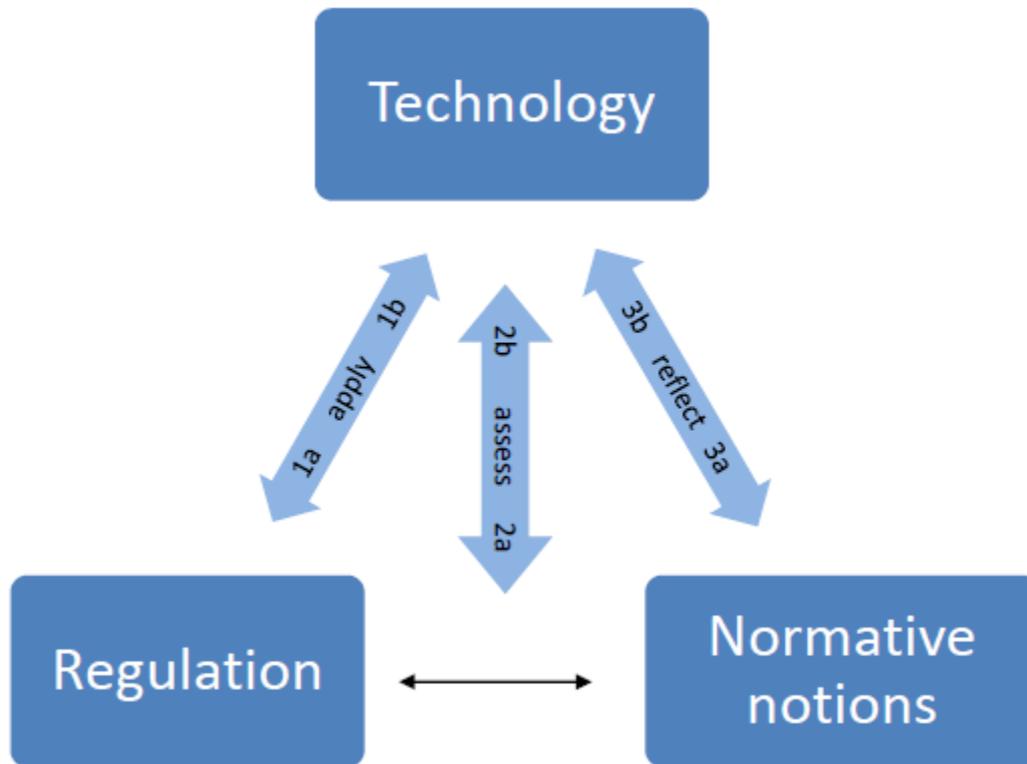


Figure 2. Research perspectives on the mutual shaping of regulation, technology, and normative notions

This leads to three types of approaches to researching technology regulation.

1. Looking particularly at the mutual shaping of technology and regulation, questions arise about a) the impact of technological developments on existing regulatory frameworks, as well as b) how regulation shapes or can shape technological developments. This perspective typically involves questions, usually descriptive in character, about *applying* some form of regulation to some form of technology.
2. Looking particularly at the mutual shaping of technology and regulation, but taking into account the way in which regulation and normative notions co-evolve, the perspective becomes more normative. Here, questions are asked a) how technology affects the normative thrust of existing regulatory frameworks, and whether such frameworks are capable of dealing with the challenges of technological developments, and b) how certain forms of regulation should be used to regulate technologies. Such questions tend to have the character of *assessing* the influence of technology on regulatory frameworks and assessing how technologies could or should be regulated.
3. Looking particularly at the mutual shaping of technology and normative notions, more fundamental and longer-term questions arise, such as a) how technology affects basic normative assumptions underlying regulatory frameworks, and how technology affects fundamental values and notions, as well as b) how technological developments can or should be governed from the perspective of deeply-ingrained values and notions embedded in our normative notions. Such questions tend to have a *reflective* character.

These approaches are, of course, not mutually exclusive; on the contrary, given the insight that regulation, technology, and normative notions co-evolve, they should rather be combined. But not all research can, or should, comprehensively study the mutual shaping process in all its aspects at the same time. The emphasis will sometimes lie on questions at the application level, for example in classic legal-doctrinal research, and sometimes more on assessing or reflective

questions; and while ideally both the impact of technology on regulation or normative notions and the impact of regulation or normative notions on technology is taken into account, the emphasis may, depending on the type of regulatory challenge at issue, lie more in one direction than another.

The study of the interplay between technology, regulation, and normative notions requires an approach combining analytical, empirical, and normative research. Several projects have a more normative character, combining legal research with empirical or conceptual understandings of social problems and possible solutions. Other projects have a more analytic focus, aiming to understand some mechanism at work in the mutual-shaping process. Hence, descriptive research using analytical and empirical tools are vital elements of our approach.

Regulation consists of different modalities – law, social norms, market, and architecture – which are grounded in different disciplines: law, social sciences, economics, and science & technology studies. Regulatory issues can often be addressed by using different modalities: a legal scholar might focus on a legal intervention, while an economist might rather use market mechanisms, such as a pricing mechanism. The modalities are sometimes complementary and sometimes substitutable. In this research programme, we primarily focus on law and on architecture ('code as law'). This is partly for historical and institutional reasons, the research group being embedded in the Tilburg University Law School. More importantly, the law is viewed as the key mode of regulation when it comes to safeguarding fundamental values and rights, and hence is indispensable in our research. Architecture is included because of the double role technology often plays here: regulation of technology by technology. Market and social norms are, in this approach, additional modes of regulation that need to be taken into account, since law and architecture are often insufficient, and sometimes unnecessary, for technology regulation.

The research programme requires a thorough understanding of the law and legal institutions in order to provide legal interpretations of technological developments and their effects. Therefore, traditional legal methods such as normative assessment on the basis of human rights, comparative law, and legislative and case-law analysis are important methods of research. Since legal research often also needs to be based on empirical findings, we employ—in addition to desk research of empirical studies—a number of additional qualitative and quantitative methods, such as questionnaires, case studies, experiments, and focus groups. TILT has in-house experience with these research methods through the composition of the research group, which includes social scientists, such as a sociologist and a psychologist. Nevertheless, TILT's capabilities in conducting empirical social research are limited and TILT therefore actively engages in co-operation with external social scientists in joint projects.

2. Strategic research characteristics

2.1. Content

Research questions related to the TILT triangle can be addressed effectively only by focusing on particular forms or problems of regulation, specific (types of) technologies—often studied in the context of a particular domains, such as health, education, or justice—, and/or specific normative notions. To indicate the range of potential research questions falling within the ambit of this programme, the following table provides a list of instantiations for each of these factors. This is just an illustrative list, which is neither exhaustive nor a typology (e.g., not all normative notions fit clearly or exclusively within a well-known normative framework); the table simply groups together frequently-used elements to clarify what kinds of things we are talking about. In principle, our research can focus on any combination of two or three elements from this table. Bold indicates that particular emphasis will be given to this element in the research programme; the remaining elements will feature in the research on a more incidental basis.

Regulation	Technologies	Normative notions
regulatory goals, e.g., innovation legal protection legal certainty regulatory means law market social norms architecture regulatory content substantive procedural regulatory institutions	ICT biotechnology nanotechnologies neurotechnologies robotics Internet of things converging technologies <i>Application domains</i> public administration crime and justice cybersecurity healthcare / eHealth education youth commerce electronic communications energy transport	utilitarianism framework individual/public interests efficiency risk human rights framework autonomy self-development identity human dignity equality and non-discrimination freedom of expression privacy and data protection communitarianism framework common good solidarity democracy and rule of law legitimacy transparency accountability various roles, responsibilities and liability sustainability property

Table 1. Focal points in TILT research

2.2. Approach

TILT's approach to research can be characterised by three key guiding principles: individual research interests, teamwork, and multidisciplinary. While TILT, as mentioned in the introduction, cherishes individual researchers' research interests and lines and allows researchers to develop their own research lines within the overall framework of the research programme, the actual research is usually done in collaboration with other researchers. Much research is conducted in funded research projects involving different teams of researchers. Researchers frequently work on several projects, in parallel or consecutively, and through the different compositions of research teams, researchers become familiar with the wide variety of backgrounds and fields of expertise present within TILT. Cross-fertilisation and synergy of research is also fostered by the academic culture of high-frequent and intensive discussions (see section 2.5.1).

At the same time, the organisation of research in multiple, partly overlapping teams and the TILT-wide discussions also facilitate multidisciplinary. Researchers frequently combine their disciplines in concrete research projects or papers. Moreover, through the discussions and collaborations, TILT researchers are exposed to, and gradually become familiar with, the different perspectives, languages, and methodologies of the core disciplines present within TILT (centring on law, ethics, and social sciences) and of other disciplines of external speakers (including, for example, economics or the 'hard' sciences).

2.3. Types of research

2.3.1. PhD research

TILT considers PhD research an important basis of the research necessary for the research programme. Many questions arising in the field of law and technology require in-depth analysis, often involving reflection on fundamental concepts or underlying assumptions of normative frameworks, and also often requiring substantial study of the socio-technical features of emerging

technologies; the considerable time and effort required for this fits with the longer time-frame of PhD research. The same features of reflecting on normative notions and studying new technologies also imply that the research is challenging for junior researchers. Our experience is that young researchers are capable of accomplishing the challenging research required of them, partly because openness to multidisciplinary and fundamental perspectives is taken into account in the recruitment process of PhD researchers, and partly because TILT's academic culture and organisation of its research (see sections 2.2 and 2.5.1) provide a flourishing environment for PhD researchers to address challenging research questions.

In line with TILT's approach to research, we welcome both PhD research proposed by PhD students themselves following their own research interests, and project-related PhD research following relevant and topical themes addressed by senior TILT staff. The former is fostered by encouraging and coaching promising students to write research proposals for Tilburg Law School's PhD positions and NWO Research Talent scheme. The latter is fostered by including PhD research in funded projects, particularly in NWO-funded research but also, where the time-frame and budget allow, in EU-funded projects. In these latter cases the project functions as a framework for the PhD research, but project-funded PhD researchers are encouraged to adapt the research questions and approach to fit their own interests, strengths, and ambitions, as long as the results fit in the broad initial project description.

PhD students follow the summer and winter course of Tilburg Graduate Law School's Research Master programme, in which they learn, inter alia, research skills and various methodologies, and critically reflecting on the approaches and assumptions underlying academic their own and others' research. Depending on the particular PhD student's experience and deficiencies, also other thematic or methodological courses are included in their Doctoral Training and Supervision Plan, which they develop together with their supervisors at the start of their research.

In line with the university's and Tilburg Law School's policy, PhD researchers have two promotores and a daily supervisor; the daily supervisor can be one of the promotores, but often is a third, senior TILT researcher acting as copromotor. This is valuable not only for the PhD researchers, but also for the senior staff to gain experience with supervising and coaching researchers. The supervision team has complementary expertise, depending on the type of research for example in different disciplines or in different legal fields; where additional expertise is needed, for example in a different legal system in comparative law projects, external researchers are requested on an ad-hoc basis to comment on particular chapters.

2.3.2. Funding strategy

This research programme sets the agenda for research funded from the basic university research funding (the so-called '1e geldstroom'). As TILT is a research institute, it substantially depends on other sources of funding (the so-called '2e, 3e en 4e geldstroom') as well. The framework research programme will serve as a guideline to decide which research projects funded from other sources will be undertaken. Contract research is welcomed, if it can add knowledge or insights that are relevant for the overall research question.

TILT will join consortia for European research projects—especially in the frame of Horizon 2020—when they fit the framework research programme and when they allow for researching relevant issues associated with the focal points of our research (Table 1). Participation in European research consortia is also welcomed where it allows us to further strengthen our relations with other research institutes as well as with industry and government, offering us the opportunity to conduct high-level and societally relevant interdisciplinary research.

At the same time, TILT puts great emphasis on the stimulation and acquisition of personal research grants, both Dutch (particularly the NWO research talent scheme (Vernieuwingsimpuls) of VENI, VIDI, and VICI grants) and European (ERC, Marie Curie). These allow researchers to grow and to develop independent research lines and to further develop their research interests and capabilities.

Striving for both types of funding allows us to develop diverse skills and objectives, depending on the type of research we acquire.

2.3.3. Synergy with education

All senior TILT researchers are involved in education, at the Bachelor level, in TILT's international Master Program Law & Technology, or at the postgraduate level. The curriculum of the Law &

Technology Program is closely related to TILT's research as each course is developed and coordinated by one of the researchers and thus specifically based on their field of expertise. This results in a curriculum where all courses have a stable overall theme (e.g., cybercrime, e-commerce, privacy) while leaving room to adjust the specific course contents to the lecturers' current research. Cross-fertilisation between research and education is also stimulated by recruiting where possible master students in TILT research projects, either as interns or by linking master theses to such projects.

2.4. Output

2.4.1. Publication strategy

Our research is international in nature. Technology development takes place on a global scale and the effects of technology adoption and use easily cross territorial borders. The issues raised by technological developments, as well as the solutions developed to address these issues by regulators, often have international value, or at least provide inspiration for local solutions. Also, regulation increasingly originates from supranational or international regulatory bodies. Therefore, the research projects usually concern topics of international interest. TILT actively seeks interaction and collaboration with international scholars to further our understanding of the technology developments, regulatory theory and normative notions. We contribute to international forums in the form of conference presentations, invited lectures, working papers, journal articles, and monographs.

The primary focus is to see research results published in **international journals**. The focus is on peer-reviewed journals because we consider the scrutiny by peers important to improve the quality of our research. Our researchers regularly publish in peer-reviewed or otherwise high-profile journals, such as Michigan Telecommunications & Technology Law Review; Berkeley Technology Law Journal; Information Communication & Society; Information Polity, and Law and Policy.

Law & Technology is a mature field with numerous high-quality journals. The heart of these journals lies in North America, where many of the top journals in the field are based. In 2009, however, TILT has established a Europe-based peer-reviewed journal together with Roger Brownsword (King's College London), Law, Innovation, and Technology. TILT makes an effort to make this journal a competitor of high-ranking US journals, not the least by submitting some of its own best papers to this journal.

Because our researchers have various disciplinary backgrounds and our empirical research spans widely different areas, ranging from cybercrime to bio-ethics, the array of relevant journals is also very diverse. Within the current research programme, we will encourage researchers to also submit papers to other disciplinary journals as well as more general legal top journals, such as the Modern Law Review and the Common Market Law Review, because the message our research delivers is not only relevant to specialist Law & Technology scholars, but also to other (legal) scholars. What Lessig (1999) remarked about cyber-law—that 'by working through examples of law interacting with Cyberspace, we will throw into relief a set of general questions about law's regulation outside of Cyberspace'—is valid for the broad range of law and technology research.

We foster **other publication types** as well. Book chapters are also an important type of output in our field; TILT encourages its researchers to contribute to books of internationally renowned publishers, such as Oxford UP, Cambridge UP, Routledge, Ashgate, Edward Elgar, and Springer. Edited volumes are also a regular type of output, with a preference for internationally renowned publishers but also allowing, depending on the type of research, for publishing with publishers that have speedy and author-friendly procedures with book prices affordable to a wider audience, such as Wolf Legal Publishers. Monographs are also an appreciated type of output.

Research results should be **publicly available**. TILT's policy is that all commissioned research reports be made public, if necessary after an embargo period of at most six months. Within European research projects, we actively stimulate to make public the deliverables to which TILT substantially contributes. For publishing in academic journals, TILT in principle only publishes in journals that allow papers to be made available to the public, either through an open-source publication model (such as many American law journals or, for example, SCRIPT-ed) or through publishing the papers in author repositories (SSRN or Tilburg University's repository). For

journals with a publication model of open access with author-paid fees, TILT will apply for an open-access grant. Exceptions to making research papers publicly available will only be made if open-access funding is unavailable and where it concerns a journal of the highest ranking.

Although the focus in publications lies on the international arena, because of the nature of the field and the international composition of the research group, TILT does not neglect the **Dutch audience**. We frequently publish in the leading generic Dutch legal journals, such as *Nederlands Juristenblad*, and in the main journals in our field, such as *Computerrecht* and *Privacy & Informatie*. Publishing for Dutch audiences is considered important both to enable discussing specific regulatory issues in Dutch law and to disseminate insights from international research to Dutch policy-makers and practitioners.

Almost all research by TILT scholars fits within and aims to contribute to TILT's research programme. Nonetheless, researchers may also have certain other fields of interest and expertise, for example deriving from previous research activities. Where relevant to maintain a research line in these other fields, researchers may also occasionally publish **non-programme-related research**, as long as they contribute substantially to the research programme (i.e., researchers should at least publish the minimum number of papers required by Tilburg Law School's system for research funding ('cof') within the TILT research programme).

2.4.2. Dissemination and knowledge utilisation

TILT's research is oriented towards topical technological developments and lends itself well for dissemination and knowledge utilisation. TILT undertakes various activities to bring its research to the attention of a wider audience. Research findings are presented to a broad international audience through the organisation of a bi-annual academic conference (*TILTING Perspectives on Technology Regulation*) on topics that are core to our research agenda. Furthermore, TILT co-organises yearly the CPDP privacy and data protection conference in Brussels, and a large part of TILT's staff is actively involved in presentation of research results. The international focus of our research does not imply a disregard for a national audience. We engage in national debates and contribute to research and policy in the Netherlands, by regularly publishing research results in Dutch academic and professional journals, writing reports commissioned by Dutch stakeholders, and voicing research-based opinions in national and regional media.

The domain in which TILT operates provides many opportunities for knowledge utilization. TILT's expertise cannot only be used to help resolve legal conflicts but can also be used to good effect for developing compliant and legally sustainable new products and services. This is evident in many EU FP7 and Horizon 2020 projects in which TILT is involved on an ongoing basis. The industrial partners in these research consortia utilise TILT knowledge to develop new products and services. At a regional level, TILT is involved with the Brainport Centre for Technology and Law, a vehicle for bringing TILT's knowledge to SME companies in the Brainport region. A new development in knowledge utilisation during the programme's duration is the start of law clinics in which TILT students under academic and non-academic supervision help companies solve real world problems in the domain of law and technology.

2.5. Organisation of the research

2.5.1. Academic culture

To maintain high quality standards in its research, TILT fosters an academic environment. This begins, importantly, with TILT's multidisciplinary approach to the topics being researched. The composition and size of the research group are unique in comparison with many other research groups in the field of law and technology: of TILT's 25-30 researchers, about half have a legal background, while the other half have a background (sometimes combined with a legal background) in disciplines such as ethics, public administration, Science & Technology Studies, industrial design, and computer science. This leads to an environment of extensive discussion and interaction between researchers, enabling in turn the placement of specific research projects in a broader context and ultimately a more holistic understanding of the mutual shaping of regulation, technology, and normative notions.

Several initiatives and schemes aim at enhancing the academic culture:

- monthly seminars, featuring external or internal speakers, to discuss research results, ideas, or important developments in the field of technology regulation, as well as regular TILT Lectures featuring external speakers; these meetings are attended by TILT researchers and

students and also open to the public, the focus of seminars being more on small-scale, in-depth discussions and the focus of TILT Lectures being more on a larger audience and broader debate;

- monthly WIP (work in progress) sessions, where work in progress is discussed in a small-scale internal setting, sometimes with an external respondent, to provide input for papers to be included in the Working Paper Series (WPS) or to be submitted to peer-reviewed journals or book editors;
- organisation of regular international expert workshops as part of research projects;
- a visiting scholar programme which allows top scholars to spend time at TILT and to collaborate with TILT researchers;
- an associated scholar programme, which involves remote collaboration with selected external scholars;
- a reading group on regulation and technology, in which TILT researchers meet and discuss classic texts from a wide range of disciplines on a monthly basis;
- in all research-related meetings, we have a mix of seniors and juniors, and juniors are stimulated to, for example, comment on senior papers in WIP sessions, as a way of helping them develop their argumentative and feedback skills;
- the possibility of academic leave, which allows TILT scholars to spend a semester on leave, typically visiting another research institute, in order to do fundamental reading and writing, broaden their network, or to explore new areas of research; academic leave can be requested and granted on a case-by-case basis;
- a bi-annual conference *TILting Perspectives on Technology Regulation*, organised since 2008.

2.5.2. Research integrity

An important consideration in any academic setting is ensuring that the research conducted is 'responsible' research that adheres to ethical principles and established (professional) standards. TILT follows the Royal Netherlands Academy of Arts and Sciences (KNAW) Declaration of Scientific Independence,² which is included as a standard clause in TILT's model tender for commissioned research.

After several high-profile national and international events, the Royal Netherlands Academy of Arts and Sciences (KNAW) published two advisory reports (KNAW 2012, 2013) that outline possible threats to scientific integrity and a number of measures for fostering professionalism and integrity in research. In short these measures include: providing training in research integrity for students and staff, tightening internal and external review of work (including replication studies), adding integrity in practice to existing assessment mechanisms and developing policies and structures for management of primary and secondary research data.

Using the KNAW reports as starting points, each year TILT devotes one of its research meetings to discussing assessment and review processes and the transparency of TILT's research culture. In order to foster research integrity also of TILT's students, the Master thesis course for all Master students includes a lecture on plagiarism and fraud.

With regard to data management, TILT aims to establish a policy for storing and managing research data, initially for empirical research (using qualitative or quantitative social-science methods), and potentially also for legal research (using legal research methods such as doctrinal analysis or comparative law). This policy will include attention for proper storage and documentation in three phases of research: initial data collection, data analysis, and submission/publication of reports and articles. Thus, an audit trail is created to facilitate internal and external review. The policy will build on existing data management policies within Tilburg University, as far as these are available, and fine-tune these to TILT's specific research context.

Another aspect of research integrity is obtain approval by an ethical committee for certain types of research, for example research involving human subjects. Currently, there is no university-wide ethical committee, nor does Tilburg Law School have an ethical committee, and—since approval by ethical committees is rarely required for TILT research—it is not efficient for TILT to set up an ethical committee itself. Pending the establishment of a university-wide and/or TLS ethical committee (which we will call for in policy discussions within TLS and TiU), we will

² In Dutch: https://www.knaw.nl/shared/resources/actueel/bestanden/wetenschappelijke_onafhankelijkheid.pdf.

seek approval, where required, on a case-by-case basis from an external or ad hoc ethical committee.

2.5.3. Research management

The research programme is managed by two programme leaders, prof. Bert-Jaap Koops and prof. Ronald Leenes, and by a programme manager, dr. Maurice Schellekens. The programme leaders are responsible for the overall quality and focus of the research and for ensuring the research group's longer-term viability. The programme manager is responsible for day-to-day management of the research, such as leading research meetings, monitoring progress of the research programme's execution, and monitoring the type and quantity of output.

On the occasion of the mid-term review, TILT will critically scrutinise the programme, in terms of both substance and procedure, and adapt the programme according to its self-assessment and the suggestions of the mid-term review committee. The programme manager is responsible for initiating the self-assessment in the second half of 2016.

The research management involves lean leadership, which focuses only on the broad lines of research, with an emphasis on facilitating a thriving academic environment and strategic decision-making on longer-term issues. TILT considers that individual researchers are professionals who flourish best when they can follow their own lines of research and choose the types of research questions and research output that fit best with their skills and interests. The specialisations associated with individual research lines also ensure that relevant new socio-technical developments and future regulatory challenges are identified and put on the research agenda at an early stage. Twenty years of experience with research in previous programmes have demonstrated that allowing research to develop bottom-up is compatible with, and organically leads to, research fitting in the programme's scope and vision, since the researchers share the core perspective of the mutual shaping of regulation, technology, and normative notions, and they collaborate closely together in many projects and joint articles in different combinations.

To foster the organic process of bottom-up research lines that fit in the overall vision of TILT research, we pay attention in the selection process of new researchers not only to how their individual research lines and interests bring added value to TILT's body of research, but also how they can engage with TILT's mutual-shaping perspective, which requires an openness to multiple, complex questions and an interest in working in a multidisciplinary setting. To assist new researchers in engaging with the mutual-shaping perspective, they are actively encouraged to read and discuss key literature, for example through participating in the Research Master's helicopter-view course on technology regulation and in the reading group.

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