RESEARCH AGENDA 2015+

Alexander von Humboldt Institute for Internet & Society

March 2014

INTRODUCTION

The Alexander von Humboldt Institute for Internet and Society (HIIG) was founded by the Humboldt Universität zu Berlin, the Berlin University of Arts and the Social Science Research Centre Berlin (WZB) in conjunction with the Hamburg-based Hans Bredow Institute (HBI) by way of an integrated collaborative partner. The overall goal of the Institute is to explore the dynamic interdependence between society and the Internet and accordingly contribute to a growing international field of research from various disciplinary perspectives.

The Research Agenda emphasises the increasing interpenetration of digital network infrastructures and everyday life. It is our common goal to study the unique dynamics of innovation on the Internet as an interplay between socio-cultural, technical and legal norms without privileging any one of these sources of ordering. To achieve this objective, most research projects span at least two research areas and are supervised by at least two research directors. All of our research projects share an interdisciplinary approach linking backgrounds and expertise in various disciplines. Research projects at the HIIG generally focus on structural features and collective practices rather than on individual behaviour or situational contexts.

The research conducted by the HIIG is organised in four research areas:

- Internet & Media Regulation
- Internet Policy & Governance
- Internet-enabled Innovation
- Internet & Global Constitutionalism

JOINT RESEARCH TOPICS AND PERSPECTIVES

Each of the four research areas has one lead project designed to shape the profile of the respective research area and generate further research questions. In addition, the HIIG pursues two overarching research topics that aim to link the various research areas but also stimulate interdisciplinary theoretical input. Our cross-cutting research activities also form important building blocks for the evolving profile of the HIIG within the nascent global network of Internet research institutes of which we are a founding partner. As our research programme evolves, we expect to develop more cross-cutting topics and concepts.

Joint Research Topics encompass:

- Online Participation
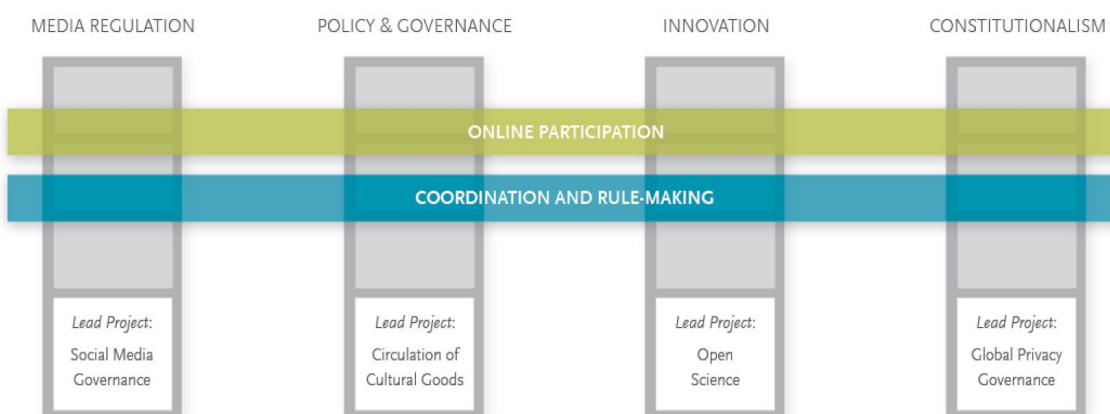- Structures of Coordination and Rule-Making

MEDIA REGULATION	POLICY & GOVERNANCE	INNOVATION	CONSTITUTIONALISM

ONLINE PARTICIPATION

COORDINATION AND RULE-MAKING

Lead Project: Social Media Governance	*Lead Project:* Circulation of Cultural Goods	*Lead Project:* Open Science	*Lead Project:* Global Privacy Governance

Figure: Research Areas and Joint Research Topics

ONLINE PARTICIPATION

The Internet is associated with the promise of individual and collective empowerment, especially in terms of policy-making and customer integration, though not restricted to these contexts. Online participation is a core aspect in understanding the interplay between the Internet and society, for the following reasons:

- People engage in various forms of participation on many levels of society, ranging from political decision-making and consensus-seeking to customer integration and co-creation in business.
- As a communication infrastructure, the Internet combines the reach of mass media with the potential of bidirectional communication. Thus, n:n communication facilitates innumerable linkages between previously unlinked knowledge. Because innovations often arise from new combinations of existing knowledge, the Internet is particularly suitable for applications in innovation management.
- Boundaries of organisations are being redefined with a tendency towards more transparency and higher levels of participation on the part of stakeholders.
- By convening, sharing their views and pooling their opinions, stakeholders are empowered. However, the relationships between organisations and stakeholders have so far not changed in the anticipated ways.

We plan to address the overarching topic of online participation through a broad approach that

takes commercial, political and social activities into account. Our focus lies on smaller sub-projects (such as the "Motivation for Online Participation" project) that contribute to a joint understanding of the wider theme. We established this joint approach in all four research areas of the HIIG, based on a transdisciplinary literature review to identify the existing arguments and research streams.

The Institute seeks to understand:

- Prerequisites and antecedents of online participation
- Processes and conditions during online participation
- Consequences that online participation entails

In detail, we intend to focus on the process of online participation (by researching and comparing the managerial capabilities required in political organisations and companies, for instance) and the consequences of online participation (by investigating and contrasting its transformative scope in terms of the balance of power, hierarchies and social practices in both political and commercial organisations) during the course of the next twelve months.

In collaboration with TNS infratest, we are currently preparing a representative survey about the motivations of users of online participation platforms, named "Die neuen Entscheider" (the new decision makers). Our research interest in this project is to understand whether the varying intensity of online participation is linked to socio-economical and motivational user characteristics. Also, we are interested to find out if public or political participatory projects attract the same group of users as those in the business world.

Alongside this project on motivations for online participation, we are carrying out a number of other projects that also contribute to this overarching theme: online participation plays an important role in the Open Science research project, for example, since Open Science aims at a collective generation of knowledge. Our projects relating to Internet & Privacy and to Orphan Works in Digital Libraries are trying to work out to what extent the general public can influence and shape legal initiatives on a national or supranational level by means of online participation. Linking our interests in the prerequisites and the processes and conditions of online participation, we are analysing the participation data of the German Parliament's e-petition platform that has been showcased on the Berlin Event 2013 ("Online into Politics?"). Smaller sub-projects were included, such as research on petitions and their shift in function in the digital age. Finally, there are plans for a workshop to address specific legal issues arising from crowd-sourcing processes.

STRUCTURES OF COORDINATION AND RULE-MAKING IN THE DIGITAL AGE

A second overarching theme concerns forms of coordination and rule-making in digital environments. Recent literature on governance structures has accentuated the plurality of origins, actors, venues and resources of rule-setting activities. For example, legal research has paid increasing attention to the relationship between social and legal norms as well as between public and private modes of ordering. As shown by the debate on copyright infringement on the Internet, social and legal norms can mutually reinforce but also undermine each other. However, the Internet also provides ample evidence for the relevance of technical norms as a means of private ordering in digital spaces. Lawrence Lessig's "code is law" reflects the popular assumption that, in the digital realm, technical settings may govern social interaction in similar ways as legal norms.

While the Internet has made co-existence including both the enabling and restricting impact of social, legal and technical settings a common experience, the dynamic interplay between various norms regulating the digital world is only gradually finding its way into research approaches. However, the more the Internet penetrates all areas of social and economic life, the more evident this decentralised rule-making authority is likely to become. Across the various disciplines involved in Internet research, there is still a lack of systematic appreciation of the interdependence and the ongoing shifts between legal, technical and social sources of rule-making in technically mediated

environments.

Several projects at the HIIG explicitly centre on the interaction between social, technical and legal norms. The lead projects "Social Media Governance" and "Circulation of Cultural Goods" focus on the interplay of theses different norms. "Social Media Governance" develops an interdisciplinary, empirical approach to investigate the normative impact and interplay of (state) law, contracts, software design and social norms on online platforms. For the context of copyright, the project "Circulation of Cultural Goods" investigates the relation of social and technical norms enabling and shaping the exchange of cultural goods. Here, our empirical focus lies on practises of innovation and imitation in contexts of legal uncertainty (format licensing, game development). With "Global Privacy Governance", a third lead project addresses the plurality of rule-making structures. This project highlights the supra-national, multi-stakeholder processes of negotiating privacy rules. Additionally, heterogeneous ordering processes of this kind are of relevance for several other projects such as "Orphan Works in Digital Libraries", "Freedom of Expression in the Quasi-Public Sphere", "Open Science" and the "Digital Administrative State".

By elevating this issue to the status of an overarching theme, we aim to strengthen the interdisciplinary bridges between the four research areas while simultaneously creating the prerequisites for comparative contributions to various research fields dealing with governance processes. Since Fall 2013, this is being implemented by a working group constituted by researchers across the four research areas who meet every other month to discuss the commonalities and differences of our specific perspectives. In 2014, the group aims to identify and make productive mutual inspirations and overlaps to shape out a systematic approach towards coordination and rule-making structures.

RESEARCH AREAS

INTERNET & MEDIA REGULATION

The Internet has become a universal technical platform that – among many other effects – shapes public communication. Research in the area of "Internet & Media Regulation" derives from questions revolving around the normative structure of this new ecology.

We can observe that intermediaries – new ones as well as established information brokers – play an important role in that structure. In fact, traditional media intermediaries are also involved as mediators in the field of Internet communication. In this context, we are particularly interested in developing configurations, investigating the impact these structures have on the production and selection of content and, finally, what this means for normative structures and governance concepts.

Lastly, we are interested in user behaviour on social media platforms. What determines how we interact with other users on these platforms? What is the most important factor (legal regulations, informal social norms or software design) and how do they interact? Research in this area can be of assistance in creating more adequate and, consequently, more effective regulation in this field. However, the main goal is to reach a better understanding of the evolving normative structures.

The research area "Internet & Media Regulation" draws on law and policy studies, conducting transdisciplinary projects on "Social Media Governance", "Notions of Public Spheres in Information Law", "Legal Aspects of Crowd-Sourcing" and "When Data becomes News".

Lead Project: Social Media Governance

Lead: Wolfgang Schulz, Co-Lead: Thomas Schildhauer

Recent tools of online communication such as blogs, wikis, social network sites or video and mobile platforms have substantially lowered the barriers for user-generated content and the articulation of personal relations, i.e. the social graph. As "social media", they have a profound impact on value-related aspects such as informational privacy or our understanding of ownership of content.

The project examines the emerging governance structure which shapes the use of social media for a certain social networking service with respect to informational privacy. The goal is to draw a picture of the normative background of user behaviour in social media, contributing to the joint research question of "Structures of Coordination and Rule-making in the Digital age" (see above).

Recent research on social media still stops at disciplinary boundaries and consequently focuses solely on certain regulatory aspects such as interface design, relative standards, communication regulations or legal norms. To get the whole picture, the project will combine these insights in an interdisciplinary approach underlying a wider understanding of "governance". Accordingly, the analytical framework identifies four governance factors: (state) law, contracts, software design and social norms.

The project's initial output is supposed to provide methodological groundwork for the analysis of these four aspects of governance in social media by (a) collecting and summarising existing academic knowledge; (b) identifying abstract categories or levels of analysis within or between the four factors; (c) extracting or re-formulating empirical indicators for each of these four factors with particular emphasis on the field of informational privacy. The anticipated outcome of this project will include instruments (such as sets of survey scales and measurements, codebooks and categories, etc), which can be employed in the empirical examination of particular social media platforms, practices or phenomena.

By applying these methodological tools in two waves of functional and structural analyses and social surveys in Germany and Israel, the project will furthermore not only analytically map the existing governance framework of informational privacy in social networks, but will also provide an internationally comparative perspective and insight into developments and trends concerning the interdependencies between the four governance aspects.

Notions of Public Spheres in Information Law

Internet-based communication has changed the fundamental dynamics of the public sphere. Traditionally, the public sphere is analytically constructed from the point of view of the role of mass media. Nowadays, many areas can be described as 'private-public spheres' (the most common examples being social networks). The first goal of this project is to obtain a better understanding of the "new public spheres" and try to find plausible terms to describe them.

The aforementioned opportunities present numerous legal problems including basic questions regarding the impact these developments have on the self-conception of society and democratic processes. Law courts, moreover, have to deal with those problems on a day-to-day basis: the challenges are conspicuous – for example, regulations regarding privacy rights were created and have evolved within the normative and legal structures of the traditional media. But can these regulations now be seen as adequate legal instruments to resolve issues related to comments written by students about their teachers on Internet platforms, just to mention a typical example for the issue area? The project intends to analyse existing legal terms and distinctions made between the private sphere and various differently defined forms of public sphere, trying to discover clues as to how best to handle these new public sphere models.

When Data become News - Developing an Instrument for a Content Analysis of Data-driven Coverage

Understanding the promise, peril and cultural meaning of "big data" is one of the primary theoretical and methodological challenges when it comes to investigating the impact of Internet-enabled communication on society. The new knowledge-generating practices also include those that determine the field of journalism, for which the phenomenon of big data has a double relevance: firstly, it is a topic that needs to be covered (critically) with respect to its different implications for society and secondly, it is already facilitating a new journalistic 'coverage pattern', a novel way to identify and tell stories. Indeed, the field of journalism is now beginning to grapple with the big data phenomenon, creating a sub-field known as "computational" or "data" journalism.

This particular project has its focus on the content level by predominantly looking at the output of data journalism. Its main aim is to develop a data collection instrument for a content analysis of data-driven coverage. The development of such an instrument is the essential groundwork for a quantitative content analysis of data-driven stories and will shed light on the features, methods and sources used for data-driven stories as well as on the topics covered by them. Overall, this project aims to contribute to a better understanding of data journalism and its specific coverage patterns.

INTERNET POLICY & GOVERNANCE

The "Internet Policy & Governance" research area addresses processes of public and private ordering on the Internet from a social science perspective. We conceptualise practices of ordering as an interplay between socio-cultural, technical and legal norms. Such norms become visible wherever they are expressed, criticised or enacted in negotiations and conflicts between various stakeholders who are involved in norm-setting processes. In this broad context, we are particularly interested in ordering processes whose regulatory outcomes are likely to affect the further development of the Internet. Examples of relevant issues are copyright legislation and enforcement, the transformation of the Internet infrastructure, and the implementation of freedom of speech in social media.

The conceptual approach draws upon and seeks to combine two schools of research in an innovative manner: governance studies and the 'science, technology and society' approach (STS) that evolved from social studies on science. The analytical strength of the governance approach lies in its ability to "decenter" rule-setting authority within a given regime. Instead of privileging ex ante the legislator and statutory norms, it aims to take all relevant actors and means of regulation into account, including, for instance, technical standards or contractual arrangements. STS studies emphasise the social character of science and technology development. Instead of treating scientific and technological achievements as black boxes, STS conceptualises them as "society made durable" (Latour). Studies focusing on governance arrangements tend to look at technology as a subject but less so as a means of regulation. On the other hand, STS studies show a sharp understanding of the links and shifts between the technical and the social but, as yet, without any clear notion of their political and regulatory dimension. Our approach is based on the assumption that, due to the socio-technical nature of ordering processes on the Internet, the study of Internet governance would benefit from a combination of both schools.

All of the current research projects in the field of "Internet Policy & Governance" share a focus on technology-related ordering processes, implying that technology is both a subject and a means of regulation. Hence, technology is understood neither as a dependent nor an independent variable but as part of a dynamic governance arrangement.

Lead Project: Circulation of Cultural Goods

Lead: Jeanette Hofmann, Co-Lead: Wolfgang Schulz

The debate about copyright law and its effect on cultural production, innovation and social welfare has been dominated by normative arguments expressed within a legal frame of reference. Still new to this research area, the social sciences seek to contribute to this debate by studying actual practices of exchanging cultural goods. Unlike the highly investigated field of patents, there is still a lack of empirical research into the significance and effects of copyright on the distribution of cultural goods.

This research project addresses the rules and practices governing the circulation of digital goods – thus contributing to the joint research question on structures of coordination and rule-making. Its overall goal is to study the role and significance of copyright law in relation to other social and technical norms that enable and shape the exchange of cultural goods. By means of empirical case studies, we want to address the popular theory of market failure for information products. Our assumption is that not all information goods are equally prone to market failure and that some evolve despite a lack of strong property rights. Based on this assumption, we aim to analyse the relevant norms and rules that shape the exchange of information goods in specific market or non-market settings. The theoretical background of the project reflects recent governance research approaches which suggest a "de-centering" of political authority. Rule-making resources, according to these approaches, are divided among various actors and include both public and private means of regulation.

We selected two types of information goods to address these questions: audiovisual formats and

computers games. Both have in common a complicated and fragmentary legal protection. TV formats are configurations of ideas, to be seen as processes and operational recipes rather than clear-cut products. From a legal point of view, they are difficult to define or grasp. Despite the legal uncertainty of audiovisual formats and the constant danger of "copycats", the international market for trading format licences has continued to grow steadily over the past decade. The gaming sector shows a similar pattern: a low-level legal protection of the creative practises within a vibrant and profitable market. In this context, a strong link between innovation and imitation becomes palpable. Discourses within the industry delineating legitimate inspiration and illegitimate plagiarism pose an auspicious starting point for empirical research on norms in cultural production.

In 2013, we hosted an interdisciplinary workshop on the production and protection of audiovisual formats with both academics and professional participants. This workshop kick-started the cooperation with CREATe, the RCUK Centre for Copyright and New Business Models in the Creative Economy at the University of Glasgow. The next step will be a joint grant proposal for an international study in this sector. As a complementary project, we will launch a case study on innovation and imitation in the gaming sector beginning in early 2014. Empirically, we will address this tension both on the discursive level of expert debates as well as on the level of everyday practices in game development.

Freedom of Expression in the Quasi-Public Sphere

The emerging publics on the Internet rely heavily on the infrastructure and platforms provided by private entities such as Facebook, Twitter, the Apple App Store, or Google. Previous research, predominantly in the form of case studies, has revealed that online platforms not only facilitate but also limit freedom of speech in certain contexts. These apparently contradictory results reflect the hybrid status of "quasi-public spheres", which are governed both by general laws ("public ordering") and by rules set out by private corporations ("private ordering"), for instance in the form of terms and conditions, or by technical architectures.

This project addresses the nexus of public and private forms of ordering by investigating how legally protected interests are balanced on privately-owned platforms and infrastructures. Democracies have developed human rights over the course of centuries. Privately owned and operated platforms apply their own regulatory mechanisms in form of corporate policies, processes and reportings – implemented and enforced by technical means. This raises the question in which way the balancing of certain human rights principles is being challenged by private entities.

Research activities within this area are carried out under three main pillars. In close relation to the core questions, firstly, a PhD project seeks to empirically investigate the private regulatory arrangements that govern user-generated content on social media platforms. The scope of the second pillar is to examine the normative framework and international discourses on the conditions for exercising freedom of expression online, predominantly by contributing to the debate on human rights standards and free speech principles. Thirdly, we are participating in the international project on "Ranking Digital Rights", which aims at developing a methodology to rank ICT companies based on their respect for free expression and privacy.

Internet Policy Review

The "Internet Policy Review" is an open access online journal on Internet regulation that provides analyses and reports on the development of soft and hard internet-related law in Europe in a peer-reviewed, short-paper format. Owing to the Institute's role as an intermediary to facilitate a dialogue between academia, politics, industry and the public, the "Internet Policy Review" has published close to 50 news and 50 peer-reviewed research articles since its launch in May 2013.

One major goal of the journal is to link current regulatory developments in Europe with existing research and relevant studies. After a pilot phase in 2013, the "Internet Policy Review" has

established key themes, ranging from cyber security to cloud computing and from online copyright to internet governance. Privacy questions are transversal to all topics. These initial themes will be joined by complementary themes in 2014. Most of the authors are researchers located at universities and institutes across Europe.

We are currently in the process of talking to potential partners and acquiring additional funding to establish the journal academically and to expand the thematic scope. In 2014, CREATe, the Centre for Copyright and New Business Models in the Creative Economy in Glasgow funded by the Research Councils UK, will join the project with both monetary and human resources.

INTERNET-ENABLED INNOVATION

In the field of "Internet-enabled Innovation", we explore how the Internet enables new forms of corporate, cultural, artistic, creative or knowledge-based goods and interaction between consumers, stakeholders, companies and the general public.

We are currently witnessing a change in the behaviour of individuals, corporations and institutions in terms of how they cooperate online. This not only means new forms of employment and new job opportunities but also new technologies and new business models. It is our goal to focus our research on this changing environment while grounding our efforts on three themes:

- **Structure:** Our aim is to structure the vast array of new and innovative efforts in the field of Internet-enabled Innovation in a way that makes it more accessible.
- **Extend:** After structuring, we are interested in pinpointing the aspects of our research topic that seem to require a deeper analysis – such as the topics of Open Science, participation online and through the Outernet, Internet-enabled business models, the index of Internet-enabled innovation as well as research on entrepreneurship aspects for internet-enabled enterprises. Here, our aim is to extend the existing knowledge base.
- **Involve:** Thirdly, we intend to include other researchers in our work, to obtain feedback from outside sources as early as possible and provide information to those interested in the topic.

"Internet-enabled Innovation" is a theme that goes beyond corporate technology management. We wish to study it from a broader perspective.

Lead Project: Open Science

Lead: Thomas Schildhauer, Co-Lead: Ingolf Pernice

The Internet dramatically changes the way knowledge is created and disseminated. Today, researchers are able to collaborate in dispersed teams by means of online tools, they can share and evaluate publications at an early stage and access latest research findings online. The Internet has the potential to make research and the access to research more efficient. In the lead project "Open Science", we study the changes and challenges in the intersection between technology and scholarly knowledge creation and dissemination. Our current research projects cover the following questions:

- How can research data best be structured in order to be found, referenced and re-used?
- What are the inhibiting and promoting factors for sharing research data?
- What is a sustainable model for data sharing in academia?
- How can the underlying meta-data from research papers be used for semi-automated analyses?
- Which digital tools are used for research?
- What role does intellectual property play in scientific publishing?

Our empirical research aims to contribute to the expanding knowledge on the subject. We have two doctoral researchers in our project team working on the topics of data sharing practices among researchers and the use of digital tools for knowledge creation and dissemination.

Our research is embedded within the Leibniz research association and the joint research project Science 2.0. Furthermore, we collaborate closely with the German Data Forum, the German Insititute for Economic Research, the German National Library of Economics, the German National Library of Science and Technology, the University of St.Gallen's Institute of Technology and Innovation Management and the German Cancer Center Heidelberg. We are planning to extend our collaborative efforts while studying this phenomenon.

In addition to our research in this lead project, we see it as our task to offer an initial orientation for other researchers and interested stakeholders. To this end, we have initiated several activities:

- We have set up an online platform (www.openingscience.org) that hosts information about open science initiatives, reviews current news and discussions on the topic and provides an appealing and informative starting-point for all those who are interested in the topic.
- We edited a book on Open Science that includes contributions from core thinkers in the field. The printed version will be available in early 2014 — an editable version of the book can already be found here (www.book.openingscience.org).
- Our doctoral researchers blog about their research projects and related topics on our institute's website (www.hiig.de/en/blog/).
- We host regular events on knowledge creation and dissemination in academia, such as the Digitaler Salon in collaboration with DRadio Wissen (www.hiig.de/en/blog/) or the public Open Science breakfast.
- We are organising a track at the General Online Research (GOR) conference in Cologne in 2014.

Motivation for Online Participation

As active contributions to various platforms on the Internet become a widespread activity, public and private organisations seek to leverage participatory interaction in decision-making processes. The success of online participation depends largely upon the ability of the organisers to motivate an adequate group of participants to engage in the given task. Organisers of participatory projects often struggle to motivate enough participants. With this research project we seek to understand the underlying prerequisites of a successful integration of citizens, volunteers or customers. With regard to the transdisciplinary approach to our research, we developed a working definition of online participation that reflects all four disciplines at the HIIG.

We have so far identified a set of motivational aspects that are common to a large number of studies on the antecedents of online participation as a basis for comparing private firms' and political organisations' approaches towards online participation. Given the fact that the private and the public sector tend to adopt very different approaches to participatory projects, we expect the comparison to provide lessons across organisations in both the industrial and the public sector. The direct output of this project consists of separate literature reviews for the HIIG's research areas of policy & governance and innovation as well as a joint conceptual paper that introduces the central issues of motivation for online participation among the general public and in the field of business.

Future research questions that arise from our work include how information stemming from online participation can be managed within an organisation, how participation influences hierarchies and how participatory projects can be compared from the point of view of success or intensity of participation. These research projects are directly connected to the overall research project concerning online participation, as described in the section "Joint Research Topics and Perspectives".

Participating through the Outernet

Due to the recent price decline and technological progress in display technology, we believe that we will soon have access to "display wallpaper" that can be bought by the meter. This will technically enable any surface in urban spaces to become digital. In the long run, we might live "inside" the Internet, surrounded by interactive and digital surfaces. We feel that this new infrastructure (the "Outernet") has considerable potential – not only in the advertising domain but also in terms of citizen participation. It is accessible without the need for any technical device on the part of the user, thus providing an opportunity to boost citizen participation by lowering barriers and enabling simple participation "in passing".

The overarching research question of this project is how the Outernet can be used for low-barrier citizen participation of this kind. From a methodological point of view, we aim to illustrate this in the form of a small actual problem, to solve this problem using a technological artefact, to investigate user reaction to the artefact by means of laboratory and field studies and then to extrapolate the results to the general problem. To this end, we set up urban screens at public locations and observe the reactions of passers-by. Our work in 2014 will build on the results achieved in 2012 and 2013, in particular: presenting content to passing users (Screenfinity), communicating simple gestures (Strike-a-Pose), enabling urban participation by stating one's opinion on public displays (MyPosition!), and connecting people in different locations (Communiplay). Based on these results, our plans for 2014 are to 1.) investigate how to best enable passers-by of public displays to choose options and express their opinion, 2.) investigate how we can spark discussions and enable breaks during interaction with public displays, 3.) investigate how we can create very large floor-displays using laser projection, and 4.) investigate how we can extend the Outernet to our physical environment, through animated robotics-inspired interfaces.

Index of Internet-enabled Innovation

How does Internet-enabled communication relate to the field of innovation management? Which drivers can be identified on a regional, national and international level? To what extent does the use of the Internet influence the innovative capacity and performance of corporations? Innovative practices such as distributing open questions to an unknown group of problem-solvers are now available for use. This not only changes the way workflows are organised but also emphasises the growing importance of inter-company cooperations. The Internet-enabled innovation index has been conceived to represent how sectors, regions and companies use the Internet when developing new products and services. We are also interested in pinpointing which Internet-related parameters influence innovativeness.

We have drawn up a set of complementary factors together with their empirical indicators that are – in conjunction with ICT use – antecedents of Internet-enabled innovation. A large-scale empirical study is still dependent on external funding which we and our research partners are currently seeking. The project is being carried out together with Prof. Blind from the Technical University of Berlin. The in-house transdisciplinary research partner for this project is Wolfgang Schulz. Together, we aim to investigate the interplay of regulatory interventions such as broadband policies and Internet-enabled innovation.

Business Models

A business model means the way a corporation promotes its products, the management's idea of what the customer would want the product to be like and how that product serves a customer need. During the course of the past 15 years, we were able to watch a multitude of industries adapt their business models to the online world. At the same time, we also observed a previously unknown degree of volatility. Some multi-billion dollar corporations were only founded years ago while successful firms are left struggling just a few months later. There is a certain dynamic to online business models that calls for profound research in this particular field.

Our current research focuses on two aspects: Firstly, we are a research partner concerned with "online business models" in the defining phase of a large-scale research grant that focuses on the digital movie production in Babelsberg. The film and television industry is currently undergoing significant changes while asking themselves if their established business models are still up-to-date. This project provides us with a profound inside view of how film studios and television producers function. Secondly, we are interested in investigating content-based visualisation-approaches like the DNA for business models to improve the comparability of firms, particularly with regard to their use of the Internet. With the aid of visualisation models / techniques, we wish to highlight certain successful mechanisms in online business models and

accordingly help young firms to better describe and develop their own business models. Currently, all organisations that are involved in the BMBF-funded D-Werft research project in Babelsberg are cooperation partners in the business model project. Furthermore do we have a new PhD candidate in the Entrepreneurship team who will focus her work on business models.

Innovation and Entrepreneurship

Digital technologies cause fundamental changes in many aspects of society. A process of 'creative destruction' affects all industries and creates threats for established players. At the same time, digital technologies provide countless opportunities for entrepreneurs.

The research project "Innovation and Entrepreneurship" contributes to a better understanding of the supporting and hindering factors of Internet-enabled entrepreneurship. The group offers 'startup-clinics' in which PhDs as members of the HIIG research group hold discussions with founders about their business models and guide them to a network of consultants and mentors. There will be a specific clinic on financial, human resource, legal and technological issues. In addition, we are glad to start a joint research clinic on the topic of Business Model Innovation with Prof. Gassmann and his research team from the University of St. Gallen. Building on the data generated by the PhDs in their clinics, the research group is able to gather increasing knowledge concerning every phase in a startup's / company's life by closely following and monitoring the specific challenges founders face and the ways they overcome them. On the macro level, the research analyses the relevance of a startup's environment including the connection to established enterprises.

Open Source Hardware and Collaborative Fabrication of Things

The ongoing digitization of manufacturing processes is sparking broad discussions. The Federal Government of Germany has initiated a project called Industry 4.0 to research and shape the development in the industrial sector. Prof. Dr. Schildhauer is a member of the advisory committee of the Industry 4.0 project.

We are currently experiencing a rapid succession of product and service innovations in the consumer sector and in the context of Fab Labs and desktop 3D printers. Because manufacturing processes are increasingly digitally controlled or even consist of printing digital designs, this development can be interpreted as a further expansion of media convergence. Thus, due to mechanisms already known in the field of information economy such as network- and lock-in effects, low marginal costs become relevant for the production of physical objects. Therefore, open licenses for physical objects enable scenarios that are similar to the model of commons-based peer production described by Yochai Benkler. In these scenarios, individual users are motivated to collect and improve valuable and freely available content by non-monetary incentives.

In 2013, we conducted a feasibility analysis case study on the democratisation of production with a 3d printer that is constructed using mostly open source hardware. We continue to report our findings and connect to the maker community in Germany in 2014. Currently, we are conducting descriptive research on usage patterns of online platforms for digital designs, based on the example of platforms such as Thingiverse and Shapeways.

INTERNET & GLOBAL CONSTITUTIONALISM

Since the last decade of the last century, the debate on the constitutionalisation of international law and global constitutionalism has advanced dynamically on the basis of very diverse approaches. A number of global challenges such as terrorism, climate change or demography call for action and response across national borders, just as the effective regulation of global financial markets or the protection of privacy or intellectual property rights in the age of the Internet require normative frameworks at the global level. The question is: How are democratically legitimate norm-setting processes, which are set up to meet these challenges, actually organised in the emerging system of global governance, and how can they be conceptualised to be more effective in the future, using the Internet with all the opportunities it offers for communication, collective action and participation in political discourses and decision-making? Studying modes of individual participation in the new public sphere (cf. supra: Notions of Public Spheres in Information Law) is of fundamental interest, but the establishment of a "toolbox" of rules – social norms, agreements, technical codes, legislation as well as the respective normative procedures (cf. supra: Internet Policy & Governance) – is at least equally important. Based upon the conceptual underpinnings of multilevel constitutionalism, the research will include the entire range of terms and conditions under which such normative processes can be established: fundamental rights, including the freedom of information and speech, free access to the Internet and net neutrality, the rule of law and other constitutional rights such as equal participation in democratic processes of political decision-making.

"Global Privacy Governance" has been chosen as the lead project. Taking the ongoing, supra-national legislative process and political debate around the proposed EU Data Protection Regulation as a starting point, the project analyses and conceptualise possible approaches for global, multi-stakeholder governance structures, processes etc. in the area of privacy, the right of personality, and data protection in the information society of the 21st century. Questions of privacy and mass surveillance have become more relevant since the revelations of Snowden. Empirical research into the behaviour of users as well as public and private actors is just as important in this study as technical knowledge, legal theory and political science appear to be.

The same applies to the second reference project: "Orphan Works in Digital Libraries". The regulation of orphan works reflects tensions between property rights and claims to access in the digital age. It also emerges as an example for how traditional norm-setting procedures are challenged by new technologies and new stakeholders that have recently arrived on the scene.

The third project: "The Digital Administrative State" will adopt a different angle. Beyond open government, social media and liquid democracy, administrative instances such as states and public authorities are challenged by new data-processing and data-mining tools. How does this impact the concept and function of public authority and its relationship to the individual and society? Furthermore, to what extent does the Internet enable public administration to fulfill tasks that it could not handle before?

Lead Project: Global Privacy Governance

Lead: Ingolf Pernice, Co-Lead: Jeanette Hofmann

The development of the Internet and its diverse applications in business, social networks and public policies presents an increasing challenge to the protection of personal data and privacy, both from the point of view of fundamental rights and of the functioning of the social system. The technology permits data collection and processing in unknown dimensions by public and private operators. Data tracks of our daily behaviour are stored permanently, and it seems impossible to erase data completely from the Internet. So-called "big data" and deep data-mining make it possible to record a personal profile of everybody without him or her knowing. With the Internet and, in particular, cloud computing, national borders become meaningless – and, apparently, so do national

approaches to protect privacy in the Internet. There also seems to be a change in the attitudes and expectations of the users: high awareness of the problem, low readiness to take responsibility and measures, even where possible, for one's own protection.

Taking the ongoing, supra-national legislative process and political debate around the proposed EU Data Protection Regulation as a starting point, the project analyzes and conceptualises possible approaches for global, multi-stakeholder governance structures, processes etc. in the areas of privacy, personality rights, and data protection in the information society of the 21st century. A first step will be to analyse this particular EU legislative process and its surrounding political and scientific debate with respect to the influence of different stakeholders on the process and on its outcomes. Its central question is whether and to what extent European law-making is already a form of societal self-regulation and could serve as a model for global norm-setting procedures. Another question is that of anonymity and identifiability in the Internet. We will conduct an interdisciplinary analysis covering anonymity's numerous social, economic, political, legal, and technical dimensions and its consequences for society. Furthermore, the research will focus on the perspective of the data subjects and their attitudes and expectations on privacy and data protection as well as their practices in using services on the Internet. It is also envisaged to more closely explore structures of privacy-governance including experiences from IGF, standardisation, (regulated) self-regulation and other forms of public-private collaboration. Special attention is actually given to the legal bases and limits for secret service surveillance programmes with regard to privacy and democratic supervision. Summing up the results of these issues, the project aims to conceptualise structures, processes etc. for a global, multi-stakeholder privacy governance.

The research is conducted by an interdisciplinary team under the lead of Ingolf Pernice and Jeanette Hofmann (HIIG) in conjunction with Björn Scheuermann and Wolfgang Coy (Informatics), Benjamin Fabian (Economics), Martin Eifert (Law), from the Humboldt University, and in cooperation with Hanna Krasnova (Economics, Berne University), Kai von Lewinski (Stiftung Datenschutz), and Ben Scott (former IT-advisor US government). Apart from papers, proceedings, and reports to be published throughout the research period of approximately four years, the results of the research will be published both online and in a peer-reviewed book on Privacy and Data Protection in the 21st Century.

The Digital Administrative State

Internet observers are currently monitoring the interplay between big data and cloud computing as an informational revolution. Against this backdrop, this project asks whether and to what extent the administrative state is facing transformative pressures as a result of the irruption of ICT in general, and the internet in particular. Departing from well-studied approaches that focus on improved state communication (such as e-government), we take a look at the new and radically innovative possibilities for decision-making and provision of public goods that the Public Administration (PA) can avail itself of today. The overall project entails two research strands. One of them will focus on the impact new computing models based on big data analytics have on administrative action and the respective challenges to our theoretical understanding of PA. Computer scientists suggest that current tools entail a development from automatisation to intelligent processes. For this reason, and borrowing concepts from organisational and business studies, our working hypothesis is that the technological environment produced by the Internet today enables the emergence of an administrative intelligence that deviates qualitatively from current administrative possibilities for action, and that existing administrative procedures are progressively being supported – if not replaced – by data-driven processes. Administrative law will necessarily be affected, because ordinary tasks such as surveillance and fraud detection, risk modeling and regulation of complex markets, interpretation and prediction of social trends or the subsequent modeling of adequate social policies will change radically. Measures and policies that are grounded on such analytical tools will also be examined, drawing on theories of Public Administration and the constitutional principles they are founded upon. Particular attention will be paid to the fundamental rights of the individuals, their participation in legitimate decision-making and to legal reviews of the new

methods of digital administration in these intelligent processes.

A second research strand will focus on areas of limited statehood and the opportunities offered by the Internet to functionally and normatively improve the implementation of state tasks in these particular environments. In recent years, nearly all developing countries have conceptualised and/or implemented e-government strategies, trying to make PA more effective and efficient, to increase the quality of service delivery and to improve the participation of societal actors (stakeholders).

Focusing on Kenya as a case study, this particular line of research intends to analyze central political, societal and technical conditions that are of particular relevance for the dissemination and implementation of e-government strategies. It asks both for enabling as well as impeding factors in the field of infrastructure and socio-political framework conditions, and analyses the impact/results (outcomes) of specific e-government projects. Special attention will thereby be given to the analytical distinction between actions aimed at improving internal (e-administration) and external (e-services) aspects of PA. In addition, we will contrast initial exceptions with the current evaluation of already implemented e-government projects.

Orphan Works in Digital Libraries

The project on orphan works was initiated from an interdisciplinary team of experts of the Humboldt-University, including Katharina De la Durantaye (law), Michael Seadle (digital libraries), Stephan Beck (ethnology) and Wolfgang Coy (informatics) and shall be conducted at the HIIG as a platform, in cooperation with Ingolf Pernice and Jeanette Hofmann (HIIG). Orphan works are copyrighted works, the rights holders of which are unknown or cannot be traced. The question of how to deal with such works has become increasingly important since books and several other cultural goods can be digitised and made available on the Internet. Since it is impossible to negotiate a licence agreement with an unknown rights holder, a considerable percentage of world literature is currently banned from digitisation and online availability. It is not only the public libraries who have an interest in setting up new rules that allow for orphan works to be used – but also private companies, and potentially authors and the general public at large. Several different solution approaches are being debated by legislative bodies around the world. In Europe, the new directive on orphan works is in the process of transposition in the various Member States. However, given the global reach of the Internet, even a European solution might not be sufficient. Ultimately, a global solution would be desirable.

To begin with, the project will focus on a comparative study of the definition of orphan works and the regulative solutions chosen in Germany, the EU and the USA. We will analyse current attempts to deal with the problem as well as discussions regarding adequate legislation in the future. Most importantly, the procedures of negotiation among key stakeholders will be examined. We will examine processes – past and underway – in order to determine the extent to which new stakeholders and, in particular, the users of the Internet are included in such debates and negotiations.

An international workshop of experts in 2013 served as a basis for an application for project funding by the German Research Fund, which will be submitted in early 2014. First findings will be presented at a workshop to be held in early 2015 as well as on an international symposion in early 2016. All research results will be published both online and in the form of edited volumes. Some of the interim findings may be published in academic journals.

The Law of Civil Security in Europe

Supported by the German Federal Ministry for Education and Research (Bundesministerium für Bildung und Forschung) the Centre for Security and Society at the University of Freiburg, the German Police Academy in Münster, the Bucerius Law School in Hamburg and the Humboldt Institute for Internet and Society in Berlin (HIIG) have come together to establish the Network for

Civil Security Law in Europe (Kompetenznetzwerk für das Recht der zivilen Sicherheit in Europa) (KORSE). KORSE is intended to become a German network with Europe-wide impact strengthening the contribution of German legal scholarship to European civil security research. Within the KORSE-project, junior researchers investigate the theoretical and practical challenges of civil security in a united Europe. The topic has gained prominence with the treaties of Amsterdam and Lisbon, which enhanced the institutional underpinnings for joint actions in this field, making a pledge to ensure an area of freedom, security and justice within the Union. With this perspective, the research conducted at the HIIG explicitly incorporates the focus on Information and Communications Technology through the following topics :

- Data exchange and information systems in the framework of police and judicial cooperation in the EU
- Combating cybercrime within the European Union
- Security of infrastructure, networks and data in a digital Europe
- Legal bases for a European cyber security law in the multilevel system of the EU

OUTLOOK

In order to develop its overall profile, the HIIG has initiated a large number of research projects during the course of its founding year. At the same time, we sought to establish collaborative relationships with other research institutes and potential funding organisations. One of the most important outcomes of these efforts is to be seen in the international Network of Centers with its nine steering committee members from four continents. In addition, we established various event formats such as the annual "Early Stage Researcher Colloquium" and the monthly "Digitaler Salon". In the second year, our activities shifted towards the raising of external research funds from both public and private sources. The focus on third-party funding is also in line with the recommendation of the HIIG's board of trustees to broaden our funding base. Furthermore, we started publishing initial research results.

Following these efforts, we seek to advance our research agenda and raise our academic profile. The following graph shows a draft of the envisioned research structure:
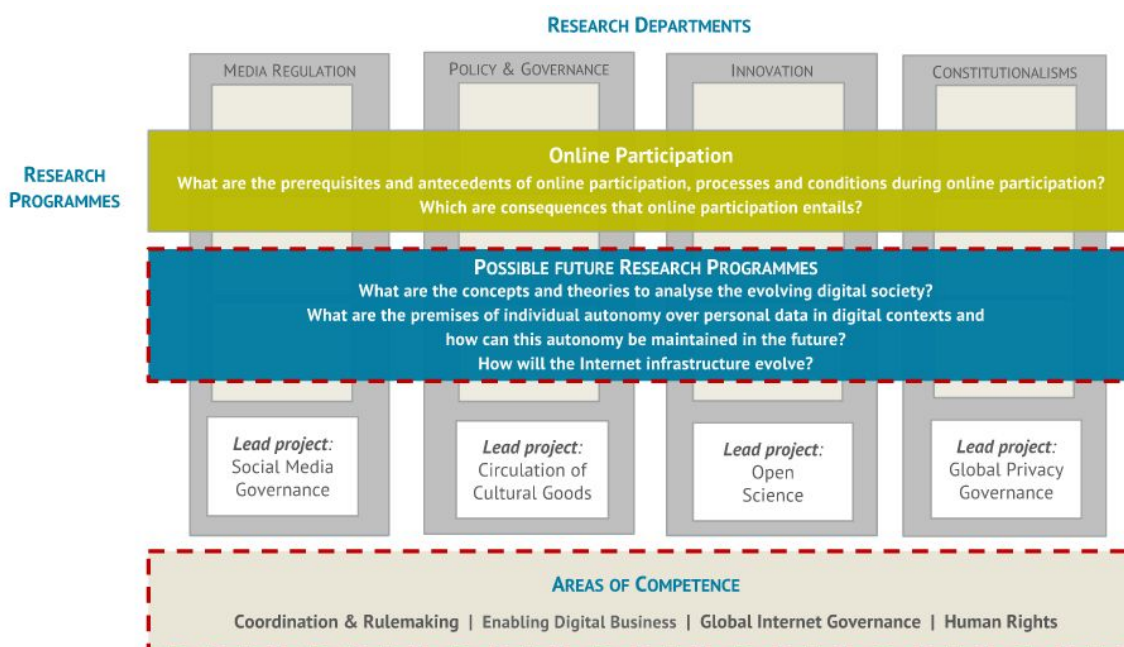
The interdependence between society and the Internet can be analysed from various perspectives. All our projects draw on aspects assumed to shape and define the "digital society". So far, however, research on the "digital society" often aims at specific phenomena without a sufficient theoretical or conceptual basis and empirical evidence. The HIIG is determined to contribute to broadening both the theoretical and empirical foundation of future research on the digital society.

The institute is currently considering its options to further structure its research agenda and sharpen its focus. Our suggested approach rests on two elements:

1. **Research Programmes:** Overarching the institute's departments, research programmes are expected to stretch over a period of 3-5 years and be driven by specific research questions. The directors and/or senior researchers (Postdocs, Visiting Professors, etc.) will be responsible for defining and pursuing the specified research questions. Projects contribute in various ways to addressing the research questions.
The institute has already gained some experience with **programme-orientated research throughout its work on participation**. Additionally we have identified several broad and complex topics that would qualify as building blocks for a long-term research programme. A first topic under consideration for programme-oriented research concerns **concepts and**

theories to analyse the evolving digital society. Another, related, programmatic topic pertains to **the premises of individual autonomy over personal data in digital contexts and how this autonomy can be maintained in the future**. A third issue relates to **the development of the Internet infrastructure**.

2. **Areas of Competence:** Long-term areas of competence allow us to address issues that are not embedded in an actual research programme. The HIIG's areas of competence represent common methodological skill sets, theoretical inclinations and research interests of the institute's members and mark fields of expertise in which the institute wants to present itself to stakeholders as a potential partner regardless of specific projects or programmes. These may also emerge from collaborative activities with external partners. The so far identified areas of competence are:

    - Structures of Coordination and Rule-making
    - Enabling Digital Business
    - Global Internet Governance
    - Human Rights

The institute welcomes input on the above-mentioned plans, especially with regard to the introduction of programme-related research and to the suggested topics and key questions.