

Implementing Web Accessibility Policy

Case Studies of the United Kingdom, Norway, and the United States

G. Anthony Giannoumis

Thesis for the degree of Doctor Philosphiae (dr. philos.)
University of Bergen, Norway
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Scientific environment

This dissertation represents an inter-disciplinary effort combining perspectives and insights from sociology, political science, and computer science. It examines the design and implementation of web accessibility policy for persons with disabilities in the United Kingdom, Norway, and the United States. The research leading to the results used in this dissertation received funding from the European Union Seventh Framework Programme ([FP7/2007-2013] [FP7/2007-2011]) under grant agreement numbers 265057 and 320079.

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In addition, my life would not have been the same without the advice of the following people. Bjørn Hvinden, thank you for your inspiring efforts to promote a more fair, just and equal society. Peter Blanck, thank you for your mentorship and boundless enthusiasm, for the opportunities you gave me to promote my career and for writing eQuality, a book that will serve as an invaluable reference for years to come. Thank you to Laurence Habib; it has been and continues to be an honour and a privilege to work with you. Your leadership, mentorship and generosity have been my inspiration. I would like also to recognize Gerard Quinn for his leadership and support of the DREAM network and Lisa Waddington and Jaap Hoogenboezem for their advice and guidance in developing this dissertation.

Finally, thank you to my mom for inspiring me, my dad for guiding me, my brother for challenging me and my wife for showing me that the greatest thing I've ever learned was just to love and be loved in return.

Preface

In 2010, after a 14 year career working in the information technology (IT) industry, I began work on a Master's thesis focusing on the unintended effects of public health law. This research first introduced me to the idea that the *spirit of the law* may differ from the *letter of the law*.

Unknowingly, I started a journey, which ultimately led to an in-depth examination of how the *law on the books* translates to *law in action*. This dissertation forms the basis and bears the fruits of my eight year investigation of the implementation of web accessibility law and policy.

In 2011, as an IT professional, familiar with the technical design of accessible websites, I applied for, was offered, and accepted a three-year position as a Marie Curie Fellow at NOVA – Norwegian Social Research as part of DREAM – Disability Rights Expanding Accessible Markets – a project funded by the European Union (EU). The project aimed to, among other things, investigate the implementation of national and international laws and policies that promote information and communication technology (ICT) accessibility.

From 2011 to 2014, the fellowship provided me with the resources, training and connections to conduct an in-depth investigation of ICT accessibility policy implementation in the UK, Norway and the US. This investigation provided the data on which this dissertation is largely based and led to the publication of the empirical analysis contained in this dissertation. After the conclusion of the Marie Curie Fellowship, I applied for and was offered a position as Assistant Professor of Universal Design of ICT at Oslo Metropolitan University. This position provided me with the opportunity to extend my research in two ways. First, in 2015, I extended my research analytically by investigating the implementation of web accessibility policy in terms of the transfer of ideas and the experiences of policy actors involved in putting web accessibility law and policy into practice. This analysis focused on policy learning, convergence and implementation from a “bottom-up” perspective. Second, in 2015 and 2016, I extended my research empirically by investigating new cases of web accessibility policy implementation. In 2015 and 2016, I participated in two EU research projects including Cloud4All - Cloud Platforms Lead to Open and Universal Access for People with Disabilities and for All – and DISCIT – Making Persons with Disabilities Full Citizens. Through these projects I was able to collect additional data with key stakeholders in Ireland, Spain, Norway and the US. In 2015, I received funding to conduct data collection in Mozambique and interviewed 13 participants from different public and private sector organizations involved in web accessibility. In 2016, following a series of trips to China, I collected data from ten participants involved in web accessibility policy design and implementation.

In 2017, I received funding from the Centre for International Education (SIU) in Norway for a five-year project titled “Mozambique/Norway Accessibility Partnership” (MAP-NORPART), which among other things aims to promote research collaboration in universal design of ICT. In addition, in 2017, I concluded a one-year research project, funded by the Norwegian Directorate for Children, Youth and Family Affairs, which tested the feasibility of an auto-recognition and auto-personalization platform for persons with dyslexia. In 2018 and 2019 I received funding from the Norwegian Research Council for three research and innovation projects focused on, among other things, the application of universal design to political participation (DEMUDIG-DEMOS), youth and civic engagement (PLAYCES-FORKOMMUNE), and risk and resilience for older persons (RELINK-IKT PLUSS). In addition, I received funding from SIU for an education project focused on universal design and local democracy in Ukraine (EGOVLOC-EURASIA).

This dissertation is dedicated to those scholars, advocates and people whose lives have not been afforded the same privileges as mine. I am sincerely grateful for your sacrifices and I hope that this work provides a small but useful basis to promote change.

Abstract

The development of information and communication technology (ICT) has had the unintended effect of producing inequalities between people with disabilities, who experience barriers using ICT, and others. Despite the efforts of the United Nations, European Union and national governments, such as the United Kingdom (UK), Norway, and the United States (US), research shows that the web remains broadly and substantively inaccessible to many persons with disabilities.

Despite a growing body of research dedicated to examining web accessibility, scholars have yet to examine fully the design and implementation of web accessibility policies from a national and cross-national perspective. This dissertation aims to fill this gap and other relevant gaps in the literature on social regulation by investigating the role of non-State actors in designing and implementing social regulations; the long-term interactions between social norms, values and procedures and the behaviours of State and non-State actors in policy design and implementation; and the influence of non-State actors on compliance-related outcomes that result from the implementation of social regulations.

Based on these gaps, this dissertation has posed one overarching research question and three sub-questions. The overarching research question asks, “How do social institutions – i.e. norms, values and procedures important to a society – affect the design and implementation of web accessibility policies?” The first sub-question asks, “How and to what extent have relevant social institutions changed over time?” The second sub-question asks, “How has the institutional setting influenced the design and implementation of web accessibility policies?” The third sub-questions asks, “How have policy actors implemented legal obligations in practice?”

In order to structure the analysis of web accessibility – a complex and multi-dimensional social, legal, and technological phenomenon – this dissertation poses a theoretical framework that integrates four analytic concepts. First, social institutions – i.e., norms, values and procedures important in a society – by definition pre-date policy design and implementation and act as a mechanism for constraining or enabling policy actors to participate in policy design and implementation. Second, policy design and diffusion processes contribute to establishing and spreading new or modified institutional norms, values and procedures. Third, new or amended policies frame or structure what kind of regulatory instruments public authorities implement to ensure or promote compliance with policy objectives and principles. Public and private sector actors respond to the adoption of policy instruments. Fourth, web accessibility social outcomes contribute to continuity or change in social institutions and may also inspire actors to pursue further policy change and look for ideas and inspiration from other countries.

This dissertation uses qualitative data collection and analyses to interrogate the assumptions embedded in the theoretical framework and provide empirical support for a series of single and comparative case studies – captured in six papers. The data include over 300 documents and 51 interviews with policy actors from public, private, and civil society organizations. What follows is a summary of the empirical papers and responses to the research questions posed in this dissertation.

Paper I originates from the observation that though governments delegate the responsibility for implementing web accessibility law and policy to regulatory agencies, in the UK and Norway, regulatory agencies have mainly focused on the use of standards to promote web accessibility. This paper explores how regulatory agencies influence the legal obligations that result from the adoption of a standard in law or policy and concludes that national policy traditions structure the adoption of voluntary or mandatory web accessibility standards.

Paper II originates from the observation that policy actors involved in web accessibility in the UK have focused mainly on the design and implementation of voluntary standards. In this paper, I examine voluntary standards as a form of social regulation. This paper concludes that standards can

support a voluntary approach to achieving web accessibility by taking into account ethical and legal norms in the standardization process.

The purpose of paper III is to examine the extent that principles in US disability antidiscrimination have influenced disability law and policy in Europe. The paper concludes that despite drawing inspiration from the US, a distinctive European approach in web accessibility policy has emerged that combines a universal, human rights perspective, with implementation procedures involving standardization and networks of policy actors.

In paper IV, I describe the processes where web accessibility standards have become part of public procurement policies the US and Europe. The paper concludes that an international policy network of web accessibility professionals contributed to the diffusion of international web accessibility standards and the convergence of ICT accessibility standards for public procurement in the US and Europe.

In paper V, I explore views on web accessibility as an issue of human rights, social inclusion and usability and what these views contribute to our understanding of web accessibility in practice. This paper concludes that interest organizations acted as intermediaries between the State and the market by translating and adjusting web accessibility policies to complement and reflect the commercial priorities of private enterprises.

In paper VI, I explore the paradigm shift towards the use of certification as a means for promoting web accessibility in practice. This paper concludes that audit and certification initiatives for web accessibility emerged in the UK and US from interest organizations.

In conclusion and in response to the overarching research question, I have found that overall social institutions affect the design and implementation of web accessibility policies by structuring participation and constraining decision-making in standardization. In addition, institutional norms, values and procedures have limited the options available to policy actors in standardization by predetermining the set of available options or promoting a default action.

In response to the first sub-question, I have found that social institutions have changed in response to the opportunities and incentives for non-State actors to participate in standardization and to promote policy implementation and compliance. However, the extent to which compliance remains a purely legal or social construct depends on the setting.

In response to the second sub-question, I have found that the institutional setting has influenced the design and implementation of web accessibility policies by constraining the options available to State actors and structuring the implementation of web accessibility policies in practice. As part of this movement away from the State, market-based values for social responsibility and profitmaking have influenced how non-State actors produce web accessibility requirements and put them into practice.

In response to the third sub-question, I have found that policy actors have implemented legal obligations in practice by emphasizing the social norms, values and procedures of web accessibility using audit and certification initiatives. As an outgrowth of the engagement between civil society and industry, interest organizations and private enterprises have developed new mechanisms for ensuring trust that exist largely outside of the direct control of the State and have used varying systems of audit and certification.

To conclude, there is no simple and straightforward legal or policy approach to achieving web accessibility in practice. The rich and detailed data, which forms the empirical basis of this dissertation, realistically shows the multifaceted nature and the complex challenges of realizing this goal.

List of publications

Six papers form the foundation of this thesis. The papers are introduced and referred to throughout the thesis.

Paper I

Giannoumis, G. A. (2014). "Regulating Web Content: the nexus of legislation and performance standards in the United Kingdom and Norway." *Behavioral Sciences & the Law* 32(1): 52-75.

Paper II

Giannoumis, G. A. (2014). "Self-Regulation and the legitimacy of voluntary procedural standards" *Administration & Society*: 1-23.

Paper III

Giannoumis, G. A. (2015). "Transatlantic Learning: From Washington to London and Beyond." *Inclusion* 3(2): 92-107.

Paper IV

Giannoumis, G. A. (2015). "Transnational convergence of public procurement policy: a 'bottom-up' analysis of policy networks and the international harmonisation of accessibility standards for information and communication technology." *International Review of Law, Computers & Technology* (ahead-of-print): 1-24.

Paper V

Giannoumis, G. A. (2018). *Regulatory Intermediaries: The Role of Interest Organizations in Supporting Web Accessibility Policy Implementation*. *Studies in health technology and informatics*, 256, 196-204.

Paper VI

Giannoumis, G. A. (2015). "Auditing Web accessibility: The role of interest organizations in promoting compliance through certification." *First Monday* 20(9).

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1. Implementing Web Accessibility Policy: Case Studies of the United Kingdom, Norway and the United States

The development of information and communication technology (ICT) has had the unintended effect of producing inequalities between groups of people that have access to and use of ICT and others (Easton, 2013a; Ellis & Kent, 2015b; Goggin, 2015; Helsper, 2008; Jaeger, 2015; Macdonald & Clayton, 2013; Vicente & Lopez, 2010; Watling, 2011; Witte & Mannon, 2010). These digital divides have emerged between younger and older people, between men and women, between high- and low-income populations, between different geographic regions, and between persons with and without disabilities. This dissertation focuses on the latter. In particular, the dissertation examines differences in public policies that aim to prevent or reduce the digital divide between persons with and without disabilities. This dissertation conceives of the digital divide as a form of social inequality where privileged groups of people have access to and use of ICT while other, socially disadvantaged groups, do not.

This dissertation starts from the perspective that the development of ICT is a socially organized phenomenon made up of many different actors engaged in providing goods and services. As such, the process of developing new ICT provides the opportunity to either mitigate or exacerbate the digital divide that reduces persons with disabilities to a form of second-class digital citizens (Muir & Oppenheim, 2002; Myhill, Cogburn, Samant, Addom, & Blanck, 2008; Ragnedda & Muschert, 2013; Vicente & Lopez, 2010; Yu, 2002).

Consistent with conceptualizations of disability used by the United Nations (UN) and in disability studies research, this dissertation refers to disability as an evolving concept that results from the interaction between an individual and the social and attitudinal barriers that limit or prevent their participation in society (Bickenbach, Chatterji, Badley, & Ustün, 1999; Hughes, 2007; Shakespeare, 2006). This dissertation recognizes that some scholars and advocates have rejected the use of the term *persons with disabilities* in favour of *disabled people* or disability specific terms such as *blind or partially sighted*, *deaf or hard of hearing*, or *autistic* (EFHOH, 2017; Kenny et al., 2016; NAD, 2017; M. Oliver & Barnes, 2012; Sinclair, 2013; Vaughan, 1997; WBU, 2017; WFD, 2017). Nonetheless, this dissertation has deliberately chosen to use the term *persons with disabilities* because it is consistent with the “person-first” approach used by the UN and national governments (Blaska, 1993; United Nations, 2006). Section 1.2.1 further details and situates this dissertation within prevailing models of disability.

Looking back to the historical development of ICT, since the mid-1970’s, the development and widespread adoption of the personal computer contributed to an expansion of the digital divide that existed between persons with and without disabilities (Freiberger & Swaine, 1999; B. Friedman & Nissenbaum, 1996; Harper & Yesilada, 2008, pp. 141 - 142; National Council on Disability, 1996; Paciello, 2000, p. 139; Thatcher, 2006, pp. 55, 104). Changes in the design of the computer’s interface further contributed to the digital divide. Computer interfaces broadly evolved from “command-line” text-based interfaces, which can be read aloud and are therefore inherently *accessible* and usable by people who are blind or partially sighted, to graphically controlled image-based user interfaces – inherently *inaccessible* to people who are blind or partially sighted (National Council on Disability, 1996). The International Organization for Standardization (ISO) has defined usability, a key component of ICT accessibility, in terms of *effectiveness* – i.e., to what extent can a user reach their goal, *efficiency* – i.e., how quickly can a user reach their goal, and *satisfaction* – i.e., to what extent is the process enjoyable (ISO, 2010).

Graphical user interfaces, the dominant form of human-computer interaction since the 1980’s, often lack text-based alternatives for visual interactions without direct intervention by the ICT developer (National Council on Disability, 1996). In the 1990’s, with the widespread adoption of the World

Wide Web (the web), persons with disabilities experienced barriers both in using a computer's graphical interface and interacting with inaccessible web content, which further expanded the digital divide (Blanck, 2014a; Wolk, 2015). The web refers to a hardware and software system, which is used to store and retrieve digital documents containing interactive references or hyperlinks to other documents stored on the web.

Turning now to contemporary developments in disability rights, in the early 1990s, the United States (US) enacted the Americans with Disabilities Act (ADA), which aimed, among other things, to promote equal opportunity for persons with disabilities. In this context, equal opportunity refers to the legal principle that policies and practices should not discriminate based on disability, which often requires more than "merely abstaining from discrimination" (Quinn, 2009, p. 100). Thus, in some jurisdictions, such as the US, United Kingdom (UK) and Australia, disability antidiscrimination legislation has included obligations for positive action in the form of reasonable accommodations (Blanck, 2009, pp. 219-259; Lawson, 2008, pp. 1-5; 2017). This dissertation conceives of reasonable accommodation as individual modifications or adjustments that ensure the equitable use of ICT for a person with a disability. Similarly, Quinn (2009, p. 92) argues that reasonable accommodation is a legal rule that requires a private enterprise to "take positive account of the disability and to reasonably accommodate it". Among its many other provisions, the ADA prohibits private enterprises from providing a good or service to an individual person with a disability or a group of persons with disabilities that is not equal to or that is different or separate from the good or service provided to others. Though disability antidiscrimination legislation originated in the US, the principles enshrined in US disability antidiscrimination legislation quickly spread globally (Burke, 1997; Halvorsen, 2010; Lawson, 2008; Quinn, 2004, 2009).

A second type of legislation emerged in the US in the 1970s, prior to the ADA. Section 504 of the Rehabilitation Act 1973 makes it illegal for any program or activity conducted by or receiving funding from the federal government to discriminate on the grounds of disability. In 1998, a subsequent amendment to the Rehabilitation Act 1973, Section 508, required Federal agencies to ensure the procurement and use of accessible ICT. The ADA, and Sections 504 and 508 of the Rehabilitation Act 1973, represent complementary approaches to promoting web accessibility. While both approaches suggest that, in the words of Quinn (2006), "markets can and should be nudged in directions that fit with our underlying commitment[s]", the ADA aims to nudge market actors directly, while Section 504 and 508 more generally nudge the market indirectly by providing inspiration through the example of government agencies' accessibility practices and financially incentivizing compliance through the purchasing power of the government.

In jurisdictions where disability antidiscrimination legislation preceded the widespread adoption of the web, legislators could not have anticipated the social, economic and cultural changes that came with the adoption of the web, so the potential application of antidiscrimination legislation to the web remained unclear. In the US, antidiscrimination legislation does not explicitly mention the web, which prompted debate over whether the web constituted a "place of public accommodation" (Blanck, 2014a, p. 63). In a series of court decisions during the 2000s, the judiciary confirmed the application of disability antidiscrimination legislation to the web (Blanck, 2014a). In the UK, the same debate largely occurred outside of the judiciary. While interest organizations in the UK brought several cases to court, virtually all of the cases settled out of court and included nondisclosure agreements, which precluded a legal precedent and public accountability (RNIB, 2012). In the UK, the application of Disability Discrimination Act 1995 to the web emerged from regulations established by UK regulatory agencies.

Contiguous with efforts in the US and UK to apply antidiscrimination legislation to the web, the European Union (EU) began to recognize the potential impact of ICT accessibility on social inclusion for persons with disabilities. In the early 2000s the EU developed a series of action plans and persuasive policies aimed at improving ICT and web accessibility (Easton, 2013b). In 2005, for instance, the EU issued Mandate 376 (M 376) to establish ICT accessibility standards for public

procurement. In 2010, the EU adopted the European Disability Strategy 2010 - 2020. The Disability Strategy recognized the low levels of compliance with web accessibility standards.

In 2011, the European Commission (EC) started the process to present a proposal for a European Accessibility Act aimed to encourage the harmonization of the EU market and the production of accessible goods and services (EC, 2011). According to the initiative,

there are increasing barriers to the free movement of accessible goods and services, due to the individual initiatives of the Member States to define their own standards in order to respond to the needs of disabled persons and of an increasingly ageing population. The fragmentation of existing and emerging markets of accessible products and services will continue to grow and in many cases the national market will be too small to be attractive for industry, whereas an EU market would be more attractive” (EC, 2011, p. 1).

By 2019, the European Parliament and the European Council agreed on the text of the EC’s proposal for a European Accessibility Act. The European Parliament is expected to adopt the European Accessibility Act in 2019 (European Commission, 2019).

In 2012, the EC proposed a directive on the accessibility of public sector websites (EC, 2012). In 2014, the European Standards Organizations (ESO) published a European standard for ICT and web accessibility “suitable for public procurement” (ETSI, 2014). Later in 2016, the EC published the directive on accessible public sector websites and mobile applications (EC, 2016).

Parallel to the developments in the EU, new international laws have emerged. In 2006, the UN adopted the Convention on the Rights of Persons with Disabilities (CRPD). The CRPD was the first human rights convention to mention the Internet explicitly and obligates States Parties to ensure access for persons with disabilities to ICT, including the web, on an equal basis with others. The CRPD states in Article 9 that

States Parties shall take appropriate measures to ensure to persons with disabilities access, on an equal basis with others, to ... information and communications, including information and communications technologies and systems ... which shall include the identification and elimination of obstacles and barriers to accessibility.

However, the kind of web accessibility policies that need to be in place to pass muster under the CRPD is not self-evident. As a human rights instrument, the CRPD acts as an aspirational legal document and does not provide concrete definitions to the same extent as is typically found in regulatory policies (Gooding, Arstein-Kerslake, & Flynn, 2015). The CRPD provides a *framework* for the realisation of broad rights-based goals, while its implementation, deferred to States Parties, poses a more complex practical challenge.

Despite the efforts of the UN, EU and national governments, research shows that the web remains broadly and substantively inaccessible to many persons with disabilities (Blanck, 2008, 2014a, 2014c; Easton, 2011; Gutierrez & Nancy, 2002; Jaeger, 2004b; Johnson & Ruppert, 2002; Kelly et al., 2009; Klein et al., 2003; Kuzma, 2010; Lazar et al., 2011; Lazar et al., 2010; Lazar, Olalere, & Wentz, 2012; Lazar & Wentz, 2011; Mills, Han, & Clay, 2008; Olalere & Lazar, 2011; C. Power, Freire, Petrie, & Swallow, 2012; Ritchie & Blanck, 2003; Rubaii-Barrett & Wise, 2008; Schmetzke, 2002; R. Williams & Rattray, 2003)

1.1 The Overall Aims of This Dissertation

With this dissertation, I aim to increase insights into web accessibility policy and practice. I do this by investigating web accessibility in the UK, Norway, and the US. I investigate how, in light of the

CRPD, web accessibility policies are implemented in practice and how social regulations are used to promote and ensure web accessibility. I examine the utility of conceptualizations for policy implementation and social regulation that focus on the interactions among State and non-State actors, such as those posed by Hill and Hupe (2008) and Levi-Faur (2011), for analysing the data presented in this dissertation.

This dissertation lies at the meeting point between two strands of research. The first strand of research draws upon empirical investigations of web accessibility as part of an interdisciplinary tradition emerging from disability studies. The second strand of research draws upon theoretical and empirical studies of social regulation and policy implementation. This dissertation aims to make a contribution to research first, by providing empirical evidence on a previously unexplored area within disability studies – i.e., by extending research on policy implementation and social regulation to web accessibility – and second, by extending research on social regulation and policy implementation – i.e., the investigation of web accessibility as a policy domain where State and non-State actors have interacted to influence the market.

1.2 Research on Web Accessibility

Research on web accessibility transcends many disciplinary backgrounds and scholarly domains. Research in human-computer interaction suggests that web accessibility involves accessing and using the web across a variety of *persons*, *activities*, *contexts*, and *technologies* (Benyon, Turner, & Turner, 2005). In terms of *persons*, web accessibility involves a person's history, experience, and technical competence in accessing and using the web and the social barriers and disadvantages that occur across the spectrum of human diversity. This includes the social barriers that persons with different physical, sensory, cognitive or psychosocial disabilities experience in accessing and using the web. Web accessibility also involves the extensive variation of possible *activities* in which persons, including persons with disabilities, may engage using the web, and the multifaceted social, political, organizational and environmental *contexts* that influence whether, how and to what extent someone can access and use the web. Finally, web accessibility also involves an ever evolving mix of *technologies*, including assistive technologies, which a person may use to access the web.

As a result of the complex relationship between persons, activities, contexts and technologies, web accessibility is subject to what scholars in general systems theory, refer to as equifinality and multifinality (Cicchetti & Rogosch, 1996; Hammond, 2010; Luyten, Vliegen, Van Houdenhove, & Blatt, 2008). Equifinality suggests that there is no single pathway that results in an accessible or inaccessible web and, rather, argues that there may be multiple possible pathways that lead to the same web accessibility or inaccessibility outcome. In practice, the equifinal aspects of web accessibility mean that, despite differing pathways for accessing the web, persons with different disabilities may experience similar barriers. For example, although persons with dyslexia and persons with visual impairments experience accessing and using the web differently, both may experience barriers accessing text on the web due to the design of the text's style, size, or colour (Evet & Brown, 2005).

In contrast, multifinality suggests that, depending on a host of mediating factors, the same mechanism may result in a variety of possible web accessibility or inaccessibility outcomes. For example, persons with similar forms of disability may experience different barriers accessing and using the web due to a variety of mediating factors such as personal experience and technical competence. In other words, a person who was born with a congenital disability experiences different barriers accessing the web than a person who has acquired the same disability or who experiences a temporary form of the same disability. For example, a person who is blind or partially sighted from birth who has grown up using assistive technologies to access the web experiences different barriers in accessing the web than someone who has recently become blind or partially sighted due to an

accident or injury or someone who is temporarily blind or partially sighted due to, for example, eye surgery.

1.2.1 Conceptualizing Disability

From an historical perspective, conceptualizations of disability have evolved with society's perceptions of persons with disabilities (Persson, Åhman, Yngling, & Gulliksen, 2014). It is beyond the scope of this dissertation to comprehensively account for the historical development of disability as a concept. Research by Barnes and Mercer (2009), Hvinden (2018), and Kanter (2014) provide a fuller treatment of the historical development of disability and disability rights. This Section provides a brief overview of relevant historical trends in society's perceptions of disability.

Ancient societies typically perceived persons with disabilities based on their contribution to society (Persson et al., 2014). In this respect, persons with disabilities were often seen as a social burden. Prior to the development of social rights, some societies regarded persons with disabilities as a "deserving poor" to protect them against the harsh treatment that poor and destitute persons might experience (De Swaan, 1988; Stone, 1986). Only later, in the 18th and 19th centuries, did governments begin to recognize disability as the result of workplace injury or military service and enact benefits policies (Logue & Blanck, 2010).

With the development of rights-based principles, such as equality and equal opportunity, society's perceptions of persons with disabilities began to change. In the mid-20th century, disability rights advocates and scholars began to challenge the prevailing status quo, which labelled disability as either a medical problem or an object of charity (Kanter, 2014). Scholars posed different models for conceptualizing disability including, among others, medical, charity, social and relational models of disability.

In the medical model, scholars conceptualize disability as emerging from an individual's physical, sensory or cognitive impairment (Lid, 2013). The medical model of disability relates principally to a healthcare provider's diagnosis and treatment. In this sense, disability is treatable in the same way as an illness through medication or rehabilitation. The charity model, relates to the medical model in that both approaches conceptualize disability as an undesirable trait or condition (Harpur, 2013; Reams, McGovern, Schultz, William, & Company, 1992). The charity model takes a paternalistic approach to caring for persons with disabilities with the effect of excluding persons with disabilities from many aspects of social life.

Disability rights scholars and advocates typically ally themselves with the social or relational model of disability. While both models share the same critical focus on disabling barriers in society, the social model typically conceptualizes disability as exclusively related to social barriers (Bickenbach, 2012, 2013; Degener, 2016; Goodley, 2014; Kayess & French, 2008; Lawson, 2008; Lid, 2013; M. Oliver & Barnes, 2012; Swain, French, Barnes, & Thomas, 2013). The relational model recognizes the social barriers that cause disability, contextualizes those barriers in relation to an individual's impairments and the activities in which they participate and examines those barriers based on the interaction between the environment's requirements and the person's capacities and skills (Degener, 2016; Fuglerud, 2015; Lid, 2013).

The social and relational models of disability are compatible with what Zola (2005) describes as a more universal approach to disability that recognizes the increasing risk of acquiring a disability or chronic illness with age. According to the author, disability should not be conceptualized in relation to people with special needs or different abilities, but should be recognized as a near universal human experience and that conceptualizing disability is part of a social process that is continually negotiated and renegotiated in various areas of public policy. Scholars suggest that the social model of disability has inspired the drafting of the CRPD and supported a rights-based conceptualization of disability (Degener, 2016; Lid, 2013). However, the resulting language of the CRPD reflects more of a

relational and universal model of disability. According to the Preamble of the CRPD, disability “is an *evolving concept* ... that ... results from the *interaction* [emphasis added] between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others”. Article 1 goes on to state “[p]ersons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in *interaction with* [emphasis added] various barriers may hinder their full and effective participation in society on an equal basis with others.”

In line with language of the CRPD, this dissertation adopts a relational and universal model of disability and argues that, in the relation to the web, disability results from the interaction between a person with impairments and barriers that reduce the accessibility and usability of web content. This dissertation argues that the design of web content, both in terms of the processes that organizations and developers use to create web content as well as the functionality of websites create accessibility barriers that prevent or limit persons with disabilities access to the web on an equal basis with others. In particular, this dissertation draws from a more universal approach to disability, which has been underutilized in research on web accessibility, and recognizes ageing as a disabling process. This relational and universal model of disability is particularly evident in Papers V and VI.

1.2.2 Conceptualizing Web Accessibility

No consensus on the definition of web accessibility exists in either research or practice. Research shows that conceptualizations of web accessibility exist on a spectrum (Elcessor, 2015; Petrie, Savva, & Power, 2015). Narrow conceptualizations, such as those articulated by Elcessor (2015), focus specifically on the barriers that persons with disabilities experience using the web. Petrie and Kheir (2007) refer to more narrow conceptualizations of web accessibility as “pure accessibility”. Research that uses this conceptualization has often focused on conformance with technical guidelines or standards (Costa et al., 2013; Kamoun, Mourad, & Bataineh, 2013; Kuzma, 2010; Olalere & Lazar, 2011; Rau, Zhou, Sun, & Zhong, 2016; Schmutz, Sonderegger, & Sauer, 2016; Shi, 2006, 2007). However, as Petrie and Kheir (2007) point out, conceptualizing web accessibility in terms of “technical accessibility” undermines broader accessibility and usability considerations that are not captured in those guidelines or standards. On the other end of the spectrum are broader conceptualizations of web accessibility, such as those provided by Petrie et al. (2015), that focus more generally on the experiences of everyone using the web. Petrie and Kheir (2007) refer to the intersection between “pure accessibility” and usability as “universal usability”. This research has conceptualized web accessibility in relation to the use and usability of the web for persons with disabilities and everyone (Aizpurua, Harper, & Vigo, 2016; Jaeger, 2008; Kelly et al., 2009; Petrie et al., 2015; Shneiderman, 2000, 2002; Waddell et al., 2003; Yesilada, Brajnik, Vigo, & Harper, 2014).

One unifying feature that typifies conceptualizations of web accessibility is that web accessibility involves an interaction between a person, the environment and the web. This feature is reflected in the conceptualization of disability adopted in the CRPD. In other words, from the perspective of the CRPD, achieving web accessibility requires the removal of barriers that prevent persons with disabilities from using the web.

This dissertation argues that web accessibility is a multidimensional phenomenon for two reasons. First, web accessibility encompasses many possible outcomes. Persons with disabilities are a heterogeneous group. This dissertation argues that the web accessibility barriers that persons with sensory impairments – e.g., persons who are blind or partially sighted – differ from the experiences of persons with intellectual disabilities. Although as Blanck (2014a), points out, eliminating barriers for persons with cognitive disabilities can benefit persons with visual impairments. In addition, research has investigated to what extent removing web accessibility barriers can benefit everyone (De Andrés, Lorca, & Martínez, 2010; Harper & Yesilada, 2008; McCarthy & Swierenga, 2010; Yesilada et al., 2014).

In this way, web accessibility relates to conceptualizations of universal design (Gossett, Gossett, Mirza, Barnds, & Feidt, 2009; Iwarsson & Ståhl, 2003). According to Article 2 of the CRPD, universal design refers to “the design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design”. In other words, ensuring web accessibility for everyone means that the web should be as usable as possible for everyone without having to change the website’s design to make it usable. From a universal design perspective, the heterogeneity among “all persons” and the barriers that they experience extends beyond conceptualizations of web accessibility that apply only to persons with disabilities.

Second, web accessibility is a multidimensional phenomenon because a variety of potential causal mechanisms may lead to web accessibility. While technical guidelines, such as the Web Content Accessibility Guidelines (WCAG), provide one mechanism by which web developers may remove web accessibility barriers, mediating factors, such as organizational processes, social and legal norms, and knowledge and awareness, may prevent or facilitate how and to what extent web developers can ensure web accessibility.

This dissertation starts from the perspective that web accessibility relates specifically to the barriers that persons with disabilities experience accessing and using the web. This dissertation acknowledges that like the conceptualization of disability posed in the CRPD, web accessibility is an evolving concept. This dissertation further argues that universal design refers to the use of the web by everyone, which necessitates the removal of web accessibility barriers for persons with disabilities. While acknowledging the relationship between web accessibility and universal design, this dissertation seeks neither to subsume web accessibility within universal design nor delineate a clear distinction between the concepts. Rather and in line with a universal conceptualization of disability, this dissertation argues that web accessibility and universal design are socially constructed concepts that continue to change with developments in research, policy and social norms.

1.2.3 Web Accessibility as an Interdisciplinary Phenomena

In recent scholarship, web accessibility researchers have contributed to two collections of articles examining web accessibility as an interdisciplinary topic. One of the collections included articles on “Disability and the Internet” and focused on the challenges and opportunities that the Internet presents for persons with disabilities (Ellis & Kent, 2015b). According to the editors, the special issue incorporates scholars from a variety of fields and the articles examine web accessibility in relation to human rights and principles of social justice (Jaeger, 2015), standardization processes and outputs (Kreps & Goff, 2015), assistive technology (Brown & Hollier, 2015), audit and certification processes (Giannoumis, 2015), educational technology (Chen, Sanderson, Kessel, & Królak, 2015; D. Wood, 2015), usability (Ellcessor, 2015), and consumer technologies (Ellis & Kent, 2015a; Goggin, 2015). Taken together, the articles show that web accessibility represents a multidimensional outcome that incorporates policy processes involved in implementing human rights, creating measuring technical criteria, providing access to assistive technologies, evaluating and verifying compliance, and ensuring that different applications of ICT are accessible and usable for persons with disabilities.

The other collection, which was published in 2014 by the journal *Behavioral Science and the Law*, included a collection of interdisciplinary articles on “Disability, law and public policy, and the world wide web”. The collection’s authors examined web accessibility outcomes in relation to social inclusion (Schreuer, Keter, & Sachs, 2014; Treviranus, 2014), and in addition, investigated web accessibility law and policy including implications for a right to the web (Blanck, 2014c), a right to culture (Ferri & Giannoumis, 2014), and the legal obligations of standards (Giannoumis, 2014). In the introduction to the collection, Blanck (2014b, p. 2) states that the articles “reflect a variety of conceptual, disciplinary, legal, and empirical approaches to disability, law and policy, and the web”.

In one of the articles, Schreuer et al. (2014) relates web accessibility outcomes to social inclusion by demonstrating the “importance of web accessibility among youths with disabilities for academic achievements [and] the transition to adulthood” (Blanck, 2014b). Treviranus (2014) also relates web accessibility to social inclusion by positing that “inclusively designed web-based market platforms, and employment, training and certification systems benefit everyone” by addressing “systemic wealth disparity, youth unemployment and financial exclusion” (Blanck, 2014b).

In another article, Blanck (2014c) focuses on web accessibility law and policy and relates web accessibility to a right to the web by framing web accessibility as part of the obligations for accessibility in the CRPD and the ADA. The author argues that case law in the US has recognized a right to the web “as the objective and comparable opportunity to use web content in ways reasonable under the circumstances” (p. 7). In a related article, Ferri and Giannoumis (2014) relate web accessibility to a right to culture by exploring “how web accessibility and information digitization further the cultural dimensions of disability policy in the EU” (Blanck, 2014b). Finally, Giannoumis (2014) relates web accessibility to legal obligations for standards by examining how “national policy traditions regarding disability anti-discrimination legislation critically mediate legal approaches to web [accessibility] standards ... in the United Kingdom and Norway” (Blanck, 2014b). According to Blanck (2014b), together the articles represent a contribution to research and advocacy on web accessibility.

1.2.4 Web Accessibility Law and Policy

In the area most closely related to the topic of this dissertation, research in web accessibility has examined web accessibility law and policy (Bertot, Jaeger, & Hansen, 2012; Blanck, 2014a; Easton, 2012, 2013a, 2013b; Jaeger, 2004a, 2004b; Noble, 2002; Rubaii-Barrett & Wise, 2008; Schaefer, 2003; Wall & Sarver, 2003; Wentz, Jaeger, & Lazar, 2011). For example, research has begun to examine the policy instruments that aim to provide social services and financial and information resources related to web accessibility (Ferri, 2015a, 2015b; Ferri & Giannoumis, 2014; Halvorsen, 2010). In a more developed strand of the literature, legal scholars and other scientists have investigated the legal basis for and disputes around web accessibility (Blanck, 2014a; Easton, 2012, 2013a, 2013b; Noble, 2002; Schaefer, 2003; Wentz et al., 2011).

Legal research in web accessibility has focused on the *application of antidiscrimination laws* (Blanck, 2014c; Easton, 2012, 2013a, 2013b; Noble, 2002; Schaefer, 2003; Wall & Sarver, 2003; Wentz et al., 2011). This research has examined the legal basis for web accessibility and the disputes that have emerged from legal advocacy efforts, principally in the US. In the UK and US, the legal obligations of web accessibility remained a contested subject for several years following initial national and international efforts to promote web accessibility. Judicial decisions in the US and regulations in the UK clarified that web accessibility is a legal obligation under disability antidiscrimination legislation and specified that barriers preventing persons with disabilities from using web content constitute discrimination.

Web accessibility policy research has also focused on the *use of standards, principles and guidelines* to examine public perception, social participation and policy approaches related to web accessibility (Blanck, 2008; Easton, 2011; Jaeger & Xie, 2009; Kelly et al., 2009; Yesilada et al., 2014). However, despite these efforts research demonstrates broadly that service providers have yet to fully ensure web accessibility (Green & Huprich, 2009; Johnson & Ruppert, 2002; Klein et al., 2003; Lazar et al., 2010; Ritchie & Blanck, 2003; Stewart, Narendra, & Schmetzke, 2005; Tatomin & Durrance, 2010; R. Williams & Rattray, 2003; Yu, 2002). A similar situation has been experienced in the UK (Easton, 2012, 2013a; Kuzma, 2010) and Europe broadly (Cullen, Kubitschke, & Meyer, 2007; Technosite, NOVA, & CNIPA, 2010, 2011). In this strand of research, scholars have argued that web accessibility standards do not sufficiently capture the usability barriers that persons with disability experience (Petrie & Kheir, 2007).

Blanck (2014a) advanced research on web accessibility policy in the book, *eQuality: The Struggle for Web Accessibility by Persons with Cognitive Disabilities*. The author explores web accessibility barriers that persons with cognitive disabilities experience and integrates national and international legislation and case law to provide a legal framework for “a right to the web”. Blanck (2014a) articulates a right to the web based on the concept of “web content equality”, which is “conceived as a civil right in the American tradition” and “is grounded in disability antidiscrimination [...] law and policy” such as the ADA (pp. 3-8). The author further demonstrates how personalizing the user experience can provide a useful mechanism for realizing web accessibility. Thus, Blanck (2014a) advances web accessibility research by arguing that remediating barriers to web accessibility requires efforts to promote customizability and interoperability.

1.2.5 Social Outcomes of Web Accessibility

In terms of social outcomes for web accessibility, this dissertation argues that two paradigms are evident in web accessibility scholarship. The first paradigm is closely aligned with developments in and compliance with national and international technical specifications, conformance criteria, standards, and other guidelines for web accessibility (Costa et al., 2013; Kamoun et al., 2013; Kuzma, 2010; Olalere & Lazar, 2011; Rau et al., 2016; Schmutz et al., 2016; Shi, 2006, 2007). The second paradigm relates more to the organizational aspects of ensuring web accessibility in practice (Arzola, Eden, & Eden, 2016; De Andrés et al., 2010; Hassell, 2015; Huffaker, Bascones, & Rubio, 2014; Sandler & Blanck, 2005; Velleman, Nahuis, & van der Geest, 2015).

This dissertation recognizes the limitations to “technical accessibility” in terms of conflating conformance with technical guidelines with the multidimensional usability and accessibility barriers that persons with disabilities experience accessing the web (Petrie & Kheir, 2007). Nonetheless, this dissertation is positioned as an interdisciplinary extension of research that has traditionally focused on web accessibility from a user-centred approach. As such, this dissertation examines web accessibility in relation to broader social, political and organizational themes including the adoption of technical guidelines and organizational processes for ensuring web accessibility.

Technical Guidelines

One strand of research on web accessibility has focused on the *outcomes* of web accessibility policies in terms of conformance with technical guidelines. The development of technical guidelines for web accessibility dates back to the invention of the web (W3C, 2012). Shortly after the development of the first web browsers, the World Wide Web Consortium (W3C) was formed with the aim to develop international recommendations for the technical interoperability of the web (W3C, 2012). By 1996, the W3C had established the Web Accessibility Initiative (WAI), which is dedicated to developing international recommendations for web accessibility (W3C, 1997). The WAI built on contiguous efforts to unify web accessibility guidelines developed by an international consortium of public, private, academic and civil society actors (Vanderheiden & Chisholm, 1998). In 1999, the WAI released the Web Content Accessibility Guidelines 1.0 (WCAG 1.0) specification as a W3C recommendation (W3C, 1999). According to WCAG 1.0, the guidelines aim to ensure access to the web for persons with disabilities and everyone. By 2002, the W3C had released two additional sets of guidelines, the Authoring Tool Accessibility Guidelines 1.0 (ATAG 1.0) and the User Agent Accessibility Guidelines 1.0 (UAAG 1.0) (W3C, 2000, 2002). While the ATAG 1.0 focused on the accessibility of software used to create web content, often referred to as web content management systems, the UAAG 1.0 focused on the accessibility of software used to retrieve and render web content, such as web browsers. By 2003, the W3C had released ATAG 2.0 and UAAG 2.0, and in 2018, the W3C released WCAG 2.1, which aimed to cover a wider range of disabilities including persons with cognitive disabilities and persons with multiple disabilities.

Since its inception, the W3C and WAI have gained influence with national and supranational governments seeking to ensure access to the web for persons with disabilities (W3C, 2018). Governments, such as the United States, Norway, Australia, Canada, and China, as well as the

European Union have adopted, referred to, or were inspired by the WAI's guidelines, in particular the WCAG. In 2012, WCAG 2.0 was adopted as an international standard by the International Organisation for Standardisation (ISO) (ISO & IEC, 2012). However, despite the pivotal role of the WAI and the WCAG, ATAG and UAAG in promoting web accessibility, scholars have criticised these efforts (Kelly et al., 2009; Kelly, Sloan, Phipps, Petrie, & Hamilton, 2005; C. Power et al., 2012). Many scholars have criticized previous versions of WCAG (1.0 and 2.0) for not including provisions dedicated to persons with cognitive and learning disabilities (M. G. Friedman & Bryen, 2007; Kelly et al., 2009; Small, Schallau, Brown, & Appleyard, 2005). Scholars have also criticized the reductionist approach that some governments have taken in adopting WCAG in law and policy (Kelly et al., 2005). Essentially, governments, including Norway, have adopted WCAG as a holistic mechanism for ensuring access to the web for persons with disabilities and have failed to consider the complex social, political, and organizational challenges that web developers may experience putting WCAG into practice (Kelly et al., 2005). These challenges are central to the inquiry of this dissertation (See Papers IV and V).

Research on the technical outcomes in relation to web accessibility guidelines and standards has focused on specific sectors, such as public libraries (Stewart et al., 2005; Tatomir & Durrance, 2010; Yi, 2015; Yu, 2002), education (Green & Huprich, 2009; Johnson & Ruppert, 2002; Klein et al., 2003), transport (Lazar et al., 2010), financial services (R. Williams & Rattray, 2003) and health services (Ritchie & Blanck, 2003). In addition, research has assessed web accessibility in *public services* including federal and regional governments in the UK and US (Jaeger, 2008; Kuzma, 2010; Olalere & Lazar, 2011). This research demonstrates that, although public and private sector organizations maintain a clear social and sometimes legal responsibility for ensuring web accessibility, these organizations have yet to fully remove barriers that persons with disabilities experience in accessing the web.

Organizational Practices

In another area, researchers have examined web accessibility as an organizational practice (Arzola et al., 2016; De Andrés et al., 2010; Hassell, 2015; Huffaker et al., 2014; Sandler & Blanck, 2005; Velleman et al., 2015). In practice, ensuring access to the web for persons with disabilities involves the complex and dynamic relationship between national and international web accessibility law and policy and organizational policies and procedures (Jaeger, 2006; Leitner, Strauss, & Stummer, 2015; Swallow et al., 2014; Velleman et al., 2015). Central to this relationship are the roles and responsibilities of managers, web developers and procurement personnel. Ostensibly, web accessibility law and policy aims to influence the behaviour of these employees by encouraging or requiring them to ensure the accessibility of their organization's websites. For managers, this may mean adjusting the process for changing the organization's website to ensure web accessibility. For web developers, this may mean changing the existing website to make it more accessible or ensuring new changes are accessible. For procurement personnel, this may mean ensuring that contracts or calls for tender include explicit provisions requiring external vendors to ensure web accessibility.

Research has shown that influencing the behaviour of managers, web developers, and procurement personnel is a multidimensional process (Jaeger, 2006; Leitner et al., 2015; Swallow et al., 2014; Velleman et al., 2015). Leitner et al. (2015) shows that managers responsible for putting web accessibility into practice within an organization can be driven by economic, social, and technical motivations. Respectively, these motivations refer to concerns over customer satisfaction, public image, and customer appeal; concerns over equality, ethical behaviour, and social responsibility; and concerns over quality improvement, stability, and security. Velleman et al. (2015) investigated the adoption of web standards by managers, web developers and procurement personnel, and showed that, among other things, the factors that influenced adoption include the perceived complexity of the standards, awareness of the standards, integration of standards in procurement processes, and presence of a legislative mandate. Jaeger (2006) points to the disparity in terms of level of accessibility when comparing the experiences of persons with disabilities with the views of web developers. In their evaluation of accessibility resources for web developers, Swallow et al. (2014)

showed that accessibility resources assume familiarity with web accessibility concepts, present information in ways that are not aligned with web development processes, and present more information than is necessary for identifying and remediating web accessibility problems. The sum of this research shows that managers, web developers, and procurement personnel mediate the implementation of web accessibility laws and policies. Papers V and VI provide further detail and analysis of the role of individual personnel and their behaviour in ensuring and promoting web accessibility.

1.3 Research on Implementing Social Regulations

Putting web accessibility policy into practice, the topic on which this dissertation focuses, is part of a broader scholarly discourse around policy implementation and social regulation.

1.3.1 Web Accessibility as a Challenge for Policy Design and Implementation

While research suggests that law and policy affect individual and organizational behaviours, research on implementation argues that this is rarely a simple case of cause and effect (Hill & Hupe, 2008). Examining implementation provides an opportunity to investigate the processes involved in realizing web accessibility outcomes in relation to stated policy objectives. Hill and Hupe (2008) provide a tripartite distinction of policy implementation and differentiate between “issues of ends (goals), issues of the relationship between means and ends (whether means chosen are appropriate) and issues of success in adopting means” (p. 137).

Theories and models of policy implementation provide a useful perspective for analysing the relationship between web accessibility law and policy and the behaviour of organizations. In addition, theories and models of policy implementation provide a useful perspective for analysing the mediating factors that influence the realization of web accessibility policy objectives. This dissertation conceives of implementation as the process that translates policy into action. Hill and Hupe (2008) and DeGroff and Cargo (2009) have argued that implementation processes can explain the difference between policy goals and outcomes.

Hill and Hupe (2008) use “implementation gap” to refer to the comparison between “what is achieved with what was expected” (p. 9). The authors contend that characterizing this “gap” as “failure” or “fiasco” is a value judgment. Thus, policy failure can be seen from different perspectives including based on organizational and individual structures, relationships, processes, norms, or power dynamics (p. 10). The authors continue by examining the evaluation of policy implementation as “a normative qualification” that compares “what is observed and what is expected” based on the values of policy actors (p. 11). In their examination of policy evaluation, DeGroff and Cargo (2009) similarly differentiate implementation processes from outcomes stating “process involves action on the behalf of the policy, whereas policy outcomes refer to the ultimate effect on the policy problem” (p. 49). The authors argue that evaluation includes policy actors that both influence policy implementation and have a stake in policy outcomes (p. 53).

In a related field of research, Howlett (2010) has argued that policy design – i.e., the process of establishing policy goals and planning the means to achieve those goals – forms a complex and interrelated mechanism for policy implementation. As such, policy design involves multiple levels of governance, and while focusing on government actions, in particular policy instrument selection, policy design also concerns non-State actors. Research on policy design is further detailed in section 2.2.1

Overall, research on policy implementation suggests that web accessibility necessitates a multidimensional framework for examining the experiences of policy actors involved in realizing web accessibility in practice. Section 2.3 reviews the literature on policy implementation in further detail, and Section 6.3 details this dissertation's contribution to research on policy implementation.

1.3.2 Web Accessibility as a Form of Social Regulation

Social regulation constitutes a multi-dimensional approach to achieving social objectives and thus acts as a point of reference for the implementation of web accessibility policies by defining the processes used to achieve web accessibility outcomes. The role of regulation in political science research has varied from administrative acts of rulemaking to alternative configurations and conceptualizations of the State (Ayres & Braithwaite, 1992; Braithwaite, 2006; Levi-Faur, 2014; Levi-Faur & Jordana, 2005; Majone, 1993, 1996, 1997). This dissertation conceives of regulation in terms of socially desired outcomes. Scholars have argued that social regulations include legislative, financial or persuasive policies that force or encourage market actors to realize policy objectives (Ayres & Braithwaite, 1992; Bemelmans-Videc, Rist, & Vedung, 1998; Levi-Faur, 2011; Majone, 1993). While legislative policies typically aim to force compliance through the use of mandatory rules and penalties, financial policies aim to encourage compliance by appealing to motives for profitability or cost efficacy (Halvorsen & Hvinden, 2015). Persuasive policies take a different approach to encouraging compliance by appealing to a sense of morality or social normativity (Halvorsen & Hvinden, 2015). Ferri (2014, p. 31) has argued for an alternative classification of regulatory instruments, focusing on both legislative policies as well as “soft-law, and self-regulatory rules or codes of practices and standards”. The latter are particularly salient for examining web accessibility as policy actors within the W3C and WAI have used web accessibility guidelines to influence both State and non-State actors in promoting and ensuring web accessibility.

Research shows that social regulation does not simply constitute unilateral action by the government (Levi-Faur, 2011, 2013). In a review of conceptualizations of regulation, Levi-Faur (2011) argues, some scholars characterize regulation in relation to State-based actions while others take a broader view of regulation in relation to the interactions among State and non-State actors (p. 3). The author argues that “State-centered conceptions of regulation define it with reference to state-made laws ... while society-centered analysts and scholars of globalization tend to point to the proliferation of regulatory institutions beyond the state (e.g. civil-to-civil, civil-to-government, civil-to-business, business-to-business, and business-to-government regulation)” (p. 3). In other words social regulations are not made exclusively by elected parliaments or other forms of government, whether national or supranational. Social regulation is neither a wholly public nor a wholly private activity. Social regulation spans the public-private sector divide and includes a multitude of actors engaged in both formal and informal processes. Ferri (2014, p. 31) describes social regulation within a “complex and comprehensive regulatory framework” that takes into account the “inter-relations among different legal systems and different law ‘suppliers’ (public and private)”. The author cites Lessig (1999) who “identified four components of the technology regulatory framework: law, social norms, market and technology itself as a regulatory tool” (p. 31). As such, research on social regulation relates to the extensive body of research that has examined ICT governance specifically (Hofmann, Katzenbach, & Gollatz, 2016; Marchant, Abbot, & Allenby, 2013; Mueller, 2009, 2010) and governance processes more broadly (Bevir, 2010; De Búrca & Scott, 2006; Jordana & Levi-Faur, 2004; Kaasch & Martens, 2015; King, 2007; Menashy, 2015; S. Wood, Abbott, Black, Eberlein, & Meidinger, 2015).

This dissertation argues that web accessibility law and policy constitute a particular aspect of ICT governance, specifically Internet governance, as it relates to UN initiatives such as the World Summit on the Information Society (WSIS) and the Internet Governance Forum (IGF) (Goggin, 2014). The WSIS and IGF represent key UN initiatives focused broadly on ICT and Internet governance and specifically on bridging the digital divide, including promoting universal design and access to ICT for persons with disabilities (IGF, 2018a, 2018b; WSIS, 2003). In addition, web accessibility law and

policy align with broader conceptualizations of social regulation as State and non-State actors have cooperated within national, international, and supranational, public and private forums to adopt a variety of policy instruments for web accessibility.

1.4 Summary of the State-of-the-Art and the Gaps Covered by this Dissertation

The literature reviewed in Section 1.2 provided cross-cutting and interdisciplinary evidence on web accessibility as a legal, social and technological phenomenon. This research additionally demonstrated the relevance and popularity of web accessibility as an applied research topic. Section 1.2.1 recounted the evolving conceptualizations of disability and has argued for adopting a relational and universal model of disability such that, in the relation to the web, disability is an evolving concept and results from the interaction between a person with impairments and barriers that reduce the accessibility and usability of web content. Section 1.2.2 provided an overview of research that has attempted to critically evaluate and synthesize a variety of conceptualizations of web accessibility. This dissertation conceptualizes web accessibility as an evolving concept that results from the interaction between a person with impairments and the barriers they experience accessing and using the web. Section 1.2.3 proceeded to summarize recent research that exemplifies the interdisciplinary nature of web accessibility scholarship. Section 1.2.4 reviewed a different strand of the literature related to web accessibility that has focused on law and policy. While some of the research in this field more broadly relates to ICT accessibility, research has investigated web accessibility law and policy from several different perspectives. While some scholars have investigated obligations for web accessibility in relation to disability antidiscrimination legislation, others have investigated policy processes in relation to web accessibility standards. One seminal work, authored by Blanck (2014a), argues that web accessibility is not limited to a legal obligation, but amounts to what the author describes as a “right to the web” for persons with cognitive disabilities. Section 1.2.5 analysed research that has investigated web accessibility outcomes. In sum, this research focuses on web accessibility as a multidimensional outcome, which includes the adoption of both technical guidelines and organizational practices for ensuring web accessibility. Section 1.3 then turned to research in political science, which serves as an additional point of departure, for considering the implementation of web accessibility policies as a form of social regulation.

Despite a growing body of research dedicated to examining web accessibility, two gaps remain. First, research has yet to examine fully the implementation of web accessibility policies as a form of social regulation (Lejeune, 2017). Research on web accessibility typically focuses on outcomes related to human-computer interactions including the technical design of web content (Costa et al., 2013; Kamoun et al., 2013; Kuzma, 2010; Olalere & Lazar, 2011; Rau et al., 2016; Schmutz et al., 2016; Shi, 2006, 2007). An emerging strand of the literature, led by legal scholars and policy advocates, has examined web accessibility law and policy (Bertot et al., 2012; Blanck, 2014a; Easton, 2012, 2013a, 2013b; Jaeger, 2004a, 2004b; Noble, 2002; Rubaii-Barrett & Wise, 2008; Schaefer, 2003; Wall & Sarver, 2003; Wentz et al., 2011). However, research has, only to a limited extent, examined the different factors – e.g., the relationships among State and non-State actors – that mediate the implementation and social regulation of web accessibility. Research has also yet to fully examine the historical antecedents and determinants of web accessibility law and policy.

Second, limited research exists that examines web accessibility comparatively (Marincu & McMullin, 2004; Technosite et al., 2010, 2011). Research has, to a limited extent, attempted to map and explore the various web accessibility laws and policies that have emerged domestically and internationally (G3ict & CIS, 2012; Thatcher, 2006). However, research has yet to systematically and comparatively investigate and explain national similarities and differences that have emerged in distinct policy regimes and jurisdictions. Based on the limitations of previous web accessibility research, this dissertation aims to provide an in-depth examination of the implementation and social regulation of web accessibility in three cases – the UK, Norway and the US.

By using research on policy implementation and social regulation as an additional point of departure for examining web accessibility, this dissertation is also situated to inform two gaps in the literature. First, research has yet to explain fully the *role of non-State actors in designing and implementing social regulations*. Research has examined standardization as part of national and international approaches to social regulation (Abbott & Snidal, 2001, 2011; Austin & Milner, 2001; Gulbrandsen, 2008; Maggetti & Gilardi, 2011; Mattli, 2001; Nicolaïdis & Egan, 2001; Spruyt, 2001; Timmermans & Epstein, 2010; Werle, 2001). Regulatory agencies use standards to define technical or procedural requirements (Brunsson, 2000; Brunsson & Jacobsson, 2000a, 2000b; Hawkins, 1995; Iversen, Vedel, & Werle, 2004; Werle, 2001; Werle & Iversen, 2006). Research has, to a limited extent, focused on the interactions among policy actors in achieving compliance-related outcomes (Ayres & Braithwaite, 1992; Coslovsky, 2011; Huising & Silbey, 2011; Silbey, 2011), including standards compliance (Christmann, 2006; Lane, 1997). This dissertation aims to investigate the role of non-State actors in *promoting compliance* with web accessibility law and policy and focuses specifically on compliance with national and international standards.

Second, research has yet to explain fully the *long-term interactions* between *social norms, values and procedures* and the behaviours of *State and non-State actors* in policy design and implementation. Research has, to a limited extent, focused on the interactions among policy actors and institutionalized norms, values and procedures in social regulation (Braithwaite, 2006; Gilardi, 2004; Levi-Faur & Gilad, 2004; Maggetti, 2014; Majone, 1996; Nicolaidis & Egan, 2001). However, research has yet to fully examine the relationship between institutionalized norms, values and procedures; policy design and implementation; and the behaviour of policy actors involved in social regulation. Therefore, this dissertation examines the *interaction between policy actors and the norms, values and procedures involved in designing and implementing web accessibility policies*.

This dissertation thus aims to fill these gaps and substantively contribute to improving the state-of-the-art in web accessibility research by examining the complex and multifaceted mechanisms that influence the way that policy actors approach the design, implementation and social regulation of web accessibility. In addition, this dissertation is positioned to contribute to enhancing web accessibility research by providing an in-depth examination of three cases – the UK, Norway and the US – and identify and compare relevant similarities and differences cross-nationally and from multiple levels of governance – i.e., nationally and supranationally.

1.5 Research Questions

Based on the gaps identified in Section 1.4, I have formed one overarching research question and three sub-questions to guide the empirical research in this dissertation.

The overarching research question asks,

How do social institutions – i.e. norms, values and procedures important to a society – affect the design and implementation of web accessibility policies?

This dissertation attempts to answer this question by identifying and explaining the mechanisms that constrain and structure policy design and implementation processes. Research indicates that social institutions may constrain and structure decision-making processes (Hall & Taylor, 1996). This dissertation examines the social institutions involved in web accessibility and the mechanisms through which social institutions influence the behaviour of State and non-State actors involved in the design and implementation of web accessibility policies.

The first sub-question asks,

How and to what extent have relevant social institutions changed over time?

This dissertation attempts to answer this question by explaining institutional change based on the motivations and opportunities of policy actors involved in web accessibility. Research suggests that the introduction of new policy instruments and policy goals can lead to institutional change (Hall, 1993). This dissertation examines institutional change in relation to the opportunities and motivations of non-State actors to cooperate in the design of new web accessibility policies.

The second sub-question asks,

How has the institutional setting influenced the design and implementation of web accessibility policies?

This dissertation attempts to answer this question by explaining the contextual mechanisms – i.e., the historical and environmental circumstances – that have structured and constrained the design and implementation of web accessibility policies. Research demonstrates that policy design and implementation occurs within situated structures and constraints (DiMaggio & Powell, 1983; March & Olsen, 2006; Room, 2011). This dissertation examines the contexts that have structured and constrained the design and implementation of web accessibility standards.

The third sub-questions asks,

How have policy actors implemented legal obligations in practice?

This dissertation attempts to answer this question by explaining the responses (i.e., the interactions between organizations) of policy actors to the introduction of a legal obligation for web accessibility. Research has shown that organizational norms, values and procedures structure and constrain the compliance practices of policy actors (Mahoney & Thelen, 2010a; C. Oliver, 1992). This dissertation examines the motivations and compliance practices (i.e., the choices of policy actors embedded within institutional norms, values and procedures) of non-State actors involved in web accessibility.

1.6 Guide to this Dissertation

This dissertation is divided into two parts. In the first part, which represents the accumulation of eight years of research in web accessibility policy, I will present the pertinent theories, methods, and ethical considerations that have led to this dissertation. In addition, part one provides a summary of the Academic Papers and an in-depth discussion as to how the six published Papers, taken as a whole, provide new insights and enhance our understanding of web accessibility as a form of social regulation and policy implementation. This Section proceeds by briefly describing the relationship between the research questions and the published Papers, then follows with an outline of the important milestones and outputs that have led to the submission of this dissertation and closes with an overview of the remaining Sections in part one.

The second part of this dissertation consists of six published Papers. These Papers, individually, have furthered research in web accessibility policy. Taken together, these Papers provide a robust empirical basis for answering the overarching and sub-questions posed in Section 1.5. This dissertation starts with the question of how are web accessibility policies designed and implemented. In order to answer this question, I drew upon the analyses and findings published in Papers I, III and IV. In particular, these Papers provide a useful basis for examining the mechanisms through which social institutions structured the participation of policy actors and constrained decision-making processes in web accessibility standardization. From this overarching research question, the three sub-questions provide further nuance and definition to the inquiry. The first sub-question departs from the broader question about policy design and implementation to ask, how and to what extent relevant social institutions changed over time. To answer this questions, I used a synthesis of the findings from Papers II, III, IV, V and VI. The findings from these Papers show that social

institutions changed over time as opportunities and incentives have emerged for non-State actors to participate in a variety of policy processes including standardization, audit, certification, and compliance. The second sub-question continues to probe the role of institutions in policy design and implementation by examining the institutional setting. To answer the question regarding, how the institutional setting has influenced web accessibility policy design and implementation, I used the analyses presented in Papers I, III, and V. These Papers, taken together, demonstrate that the institutional setting, in particular the historical and environmental contexts, have structured the implementation of web accessibility policies in practice and constrained the policy options available to regulatory agencies. Finally, the third sub-question, seeks to dive deeper into the compliance practices of non-State actors in ensuring web accessibility and asks how have policy actors implemented legal obligations in practice. To answer this question, I drew upon the empirical findings in Papers V and VI, which showed that non-State actors have supported policy implementation by acting as intermediaries between the State and the private sector to audit and certify compliance with web accessibility policies.

Table 1 provides a timeline that briefly outlines the important milestones and outputs that have led to the submission of this dissertation.

Table 1: Dissertation Timeline of Milestones and Outputs

2012	<ul style="list-style-type: none"> - Initial document data collected on web accessibility law and policy and disability rights - Preliminary data collected in the UK - Literature reviewed on social institutions and policy design and implementation
2013	<ul style="list-style-type: none"> - Additional data collected in the UK - Data collected in the US and Norway - Preliminary analyses of document and interview data - Drafted and submitted manuscripts for Papers I and II
2014	<ul style="list-style-type: none"> - Papers I and II published - Literature reviewed on policy diffusion, social regulation, and policy networks - Drafted and submitted manuscripts for Papers III, IV, V, and VI
2015	<ul style="list-style-type: none"> - Papers III, IV, and VI published
2016	<ul style="list-style-type: none"> - Developed analytic framework (Section 2) for dissertation - Drafted dissertation part 1
2017	<ul style="list-style-type: none"> - Submitted dissertation
2018	<ul style="list-style-type: none"> - Resubmitted and published Paper V
2019	<ul style="list-style-type: none"> - Resubmitted dissertation

As an aside, it is worth noting that although this dissertation represents a contribution as a whole to research on implementing web accessibility policy, the research that has gone into this dissertation represents only a subset of a broader piece of work that has focused on the interdisciplinary and inter-sectoral applications of universal design of ICT. Although the timeline in Table 1 provides a fairly straightforward overview of the research that has gone into this dissertation, it does not reflect this broader agenda, which includes efforts to extend my research into new geographical areas (Ding &

Giannoumis, 2017; Manhique & Giannoumis, 2018), new service applications (Ahmad, Beyene, & Giannoumis, 2018; Hagerup, Giannoumis, Haakonsen, & Ryan, 2017; Tatara & Giannoumis, 2017), new and emerging ICT (Ferati, Murano, & Giannoumis, 2017; Giannoumis, 2018; Giannoumis, Ferati, Pandya, Krivonos, & Pey, 2018; Giannoumis, Land, Beyene, & Blanck, 2017; Thapa, Ferati, & Giannoumis, 2017), and new analytic models and frameworks (Böhler & Giannoumis, 2017; Giannoumis, 2016; Skjerve, Giannoumis, & Naseem, 2016).

Part one of this dissertation continues in seven Sections. In the first Section, I briefly introduce web accessibility as it relates to policy implementation and social regulation, identified the relevant gaps in the literature, and posed one overarching research question and three sub-questions. Section two continues by establishing a theoretical framework, which aims to provide a conceptual backdrop and locus of investigation for the empirical research that forms the basis of this dissertation. Section three then describes the methods, data and analysis used in the empirical research on which this dissertation is based. Section four details the ethical considerations taken as part of the data collection. Section five outlines the “red thread” that connects the empirical research and analyses used in this dissertation. Section six responds to the research questions and sub-questions and discusses the summative contributions that the six papers, which make up the empirical research in this dissertation, have made to the research literature. Finally, Section seven concludes by summarizing the contribution of this dissertation to future research. The papers, consent form, topic guide and ethics approval are then appended in their respective annexes in full.

2. Theoretical Perspectives on Institutions, Policy Design and Diffusion, Policy Implementation and Outcomes

A recent review of the literature by Cerna (2013) suggests that a variety of overlapping theories in public policy and political science may be used to explain policy design and implementation processes. In order to structure the research methodology and to provide a continuous point of reference for the data collection and analysis, this dissertation has used a comprehensive theoretical framework drawn from research in four fields: social institutions, policy design and diffusion, policy implementation, and outcomes.

In particular, this theoretical framework has provided a valuable set of analytic lenses with which to reflexively investigate and shed light upon the processes and relationships that influence the design and implementation of web accessibility policy. This dissertation uses this broad range of theories and models of public policy to provide a more holistic examination and potential explanatory value for the mechanisms that contribute to web accessibility policy design and implementation. As such, the models have served as a continuous point of reflection and have helped elaborate the evidence detailed in the Papers and in the discussion in Section 6.

In Section 2, I will outline four main components for examining web accessibility policy for persons with disabilities: (1) social institutions, (2) policy design and diffusion, (3) implementation, including the relationship between state and non-state actors and approaches to social regulation, and (4) policy outcomes. The research that underpins these four components, which is reviewed in detail in Sections 2.1 to 2.4, provide a rich and intricate backdrop for examining the mediating factors that influence the design and implementation of web accessibility policies. While, the organization of this Section may imply that the four concepts are mutually exclusive, the literature reviewed in each sub-section shows the overlapping relationships and sometimes integrated nature of these concepts as well as the related fields of research included in the sub-sections.

2.1 Social Institutions

Institutional theory provides a basis to analyse how social institutions have structured and constrained the design and implementation of web accessibility policies and whether social institutions have changed over time. In addition, institutional theory provides an analytic lens for examining the influence of the institutional setting, in terms of history and environment, on the design and implementation of web accessibility policies. This dissertation uses research on institutions as a point of departure for examining the relationship between outcomes and the design and diffusion of web accessibility policies. Specifically, this dissertation uses different institutional perspectives to distinguish between evidence pointing to changes in web accessibility norms, values and procedures from evidence suggesting stability in web accessibility norms, values and procedures.

2.1.1 Institutional Perspectives

Hall and Taylor (1996) differentiate three analytical approaches to examining institutions. The authors theorize that historical institutionalism, rational choice institutionalism and sociological institutionalism provide contrasting approaches for examining the relationship between institutions and actor behaviour and help explain the processes of institutional creation and change (Hall & Taylor, 1996).

Historical institutionalism emphasizes the role of policy traditions as “taken-for-granted” assumptions that structure the choices of policy actors (Blyth, Helgadóttir, & Kring, 2016; Fioretos, Falleti, & Sheingate, 2016; Hall, 2016; Hall & Taylor, 1996, p. 940). Research has used historical institutions to explain the “distinctiveness of national political outcomes” (Hall & Taylor, 1996; Sanders, 2006). Historical events provide a useful basis for comparing national approaches to the creation, evolution and perpetuation of institutions. Research has also examined the historical development of institutions to explain the intended and unintended outcomes that result from the long-term interactions of policy actors (Mahoney, Mohamedali, & Nguyen, 2016; Sanders, 2006). Historical institutionalism attempts to explain the interactions of policy actors situated in time and culture. Research has examined the causal connections generated by the creation and long-term development of historical institutions (Hall & Taylor, 1996). Researchers that adopt a historical institutionalist perspective posit that ideas and interests generate preferences over time (Campbell, 1998; Steinmo, Thelen, & Longstreth, 1992).

In contrast, *rational choice* institutionalism emphasizes the strategic and analytical choices of policy actors in determining policy outcomes. The concept of “rational choice” relates to economic theories that characterize the actions of individuals as logical and self-interested (Weintraub, 1985). In a rational choice approach, institutions structure the interactions among policy actors by constraining the choices and responses of policy actors.

Finally, *sociological institutionalism* emphasizes the role of culturally appropriate practices as opposed to instrumental means for achieving organizational goals. According to researchers that utilize a sociological institutionalist approach, institutions revolve around shared attitudes or values, which act as constraints not to what organizations and persons can do, but what they can imagine doing (Hall & Taylor, 1996). Essentially institutions act as social conventions that, in interaction with individual behaviours, limit the menu of possible options available for action. These interactions may result in new organizational practices due to the perceived legitimacy or social appropriateness of those practices, which may not align with the organization’s formal goals. Cultural, as opposed to purely hierarchical, authorities can confer legitimacy on new institutional arrangements and thereby effectuate change.

While research has typically retained the distinction between historical, rational choice and sociological institutionalism, Hall (2010) suggests that exploiting commonalities among the institutional approaches can result in a more useful analysis. This dissertation combines historical and sociological institutionalism to examine the social institutions of policy design and implementation. This dissertation conceives of social institutions as the formal and informal norms, values and procedures important to a society that structure and constrain the choices of policy actors. Other scholars have similarly argued that social institutions constitute resilient, ordered and predictable rules, norms and procedures (Hall, 2010; Hall & Taylor, 1996; Peters, 1998). This dissertation emphasizes the role of social institutions in partly empowering and partly constraining policy actors involved in web accessibility (Hall & Taylor, 1996). Thus, social institutions create bias while also acting as “arenas of change” by indirectly affecting behaviours and outcomes (DiMaggio & Powell, 1983; March & Olsen, 2006; Room, 2011).

This dissertation recognizes the relevance of rational choice institutionalism for examining web accessibility. However, it argues that while rational choice institutionalism may provoke a more in-depth examination into the strategic choices of particular policy actors, the historical patterns and cultural preferences and identities of policy actors provide more analytic value for considering the implementation of web accessibility law and policy. This choice is, in part, informed by the methodology, as the reflexive approach to data collection and analysis revealed, only to a limited extent, clear-cut strategic approaches to designing and implementing web accessibility policies. Moreover, the choice to focus on historical and sociological institutionalism was informed by the topic itself, as the historical antecedents to web accessibility policy date back to the disability rights movement in the US in the 1960s and clear path dependent processes can be traced to current day. The emergence of the disability rights movement legitimized the shared ideas, attitudes, values, and

frames of meaning that went on to shape subsequent approaches to designing and implementing web accessibility policy around the world. From an organizational perspective, sociological institutionalism is particularly relevant as web accessibility policy fundamentally aims to influence behaviour in a way that, from a rational-choice perspective, may not directly align with the organization's formal goals. Part of the value that sociological institutionalism provides for this inquiry revolves around the extent to which some institutional arrangements become replaced by new, more socially appropriate institutional forms and practices and the role cultural authority and legitimacy play in these processes.

I use this literature as a basis for examining the influence of institutional norms, values and procedures on the design and implementation of web accessibility law and policy. Specifically, this dissertation uses different institutional perspectives to examine the default assumptions and positions of policy actors based on the historical, socio-cultural and organizational contexts in which they operate. These analytic lenses provide a useful basis for examining both how social institutions structure and constrain the behaviour of policy actors in policy design and implementation as well as the role of institutions as a forum for introducing changes aimed at promoting web accessibility.

2.1.2 Institutional Change and Resilience

Research on institutions has also focused on the mechanisms for institutional change (Greif & Laitin, 2004; Hall, 1993; Hall & Thelen, 2009; Lieberman, 2002; Mahoney & Thelen, 2010b; Rocco, 2014; Streeck & Thelen, 2005). This dissertation mainly conceives of institutional change as a process of policy learning (Hall, 1993). Hall (1993) argues that policy learning is “a deliberate attempt to adjust the goals or techniques of policy in response to past experience and new information” (p. 278).

Hall (1993) differentiates between, first, second and third order changes. First order changes refer to routinized policy alterations selected from a specified set of options. First order changes occur in response to and based on the consequences of previous changes. In comparison, second order changes refer to larger scale adjustments in policy instruments. Hall (1993) specifies that second order changes occur “in response to dissatisfaction with past policy” (p. 283). This dissertation examines second order changes in web accessibility policy, such as the introduction of social regulations, including standards, for web accessibility. Finally, compared to second order changes, third order changes represent an even larger scale transformation of policy goals. Hall (1993) characterizes third order changes as a response to broader social, political and economic interests that extend “beyond the boundaries of the state” (p. 288). This dissertation examines third order change in web accessibility policy, such as the paradigmatic changes associated with the international adoption of web accessibility principles, standards and guidelines. Therefore, this dissertation examines institutional change as adjustments in policy instruments (i.e., second order change) and transformations of policy goals (i.e., third order changes).

Research has examined institutional change in relation to path dependence (Conran & Thelen, 2016; Crouch & Farrell, 2004; Rixen, 2014; Ross, 2008; Schienstock, 2011). This dissertation conceives of path dependence as self-reinforcing processes that, over time, lead to institutional stability. Scholars have argued that institutional change is often pre-structured (Pierson, 2000; Rixen, 2014; Schienstock, 2011, p. 64). Research has used path dependence as an analytic concept to explain the bounded regularity of technological change (Boas, 2007; David, 1985) and the perpetuity of policy regimes (Saxonberg, Sirovatka, & Janouskova, 2013; Schienstock, 2011).

Research has examined path dependence in relation to organizations as agents of institutional change (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; North, 1990; Powell & DiMaggio, 1991; W. R. Scott, 2013). North (1990) has argued that the interaction between an organization's activities and social institutions contribute to incremental change. The author attributes this form of institutional change to the design of the organization's strategic objectives – i.e., organizations pursue the motivations of their creators and in effect induce institutional change. However, North (1990)

suggests that technology acts as a constraint on the organization by limiting whether and to what extent an organization may pursue its goals.

David (1985) has examined the interaction between the introduction of new technologies, organizations and institutional change. The author found that the initial success of the “QWERTY” keyboard arrangement for typewriters led to its success as businesses benefited from adopting the typewriter that was commonly used by typists in training and education. In tandem, students wanted to be trained on the typewriter that was being used by businesses. Boas (2007) elaborates on this model by using the Internet to illustrate the effects of technological change over time. The author states that the evolution of the Internet has made it more valuable as new services such as email and the web have been introduced (p. 42). According to Boas (2007, p. 43), the introduction of new products and services offered via the Internet has made it “amenable” to government control not through the modification of the underlying architecture, but by influencing how goods and services are provided.

Pierson (2000) reviews previous research in economics that examines the concepts of path dependency and increasing returns. The author conceptualizes increasing returns as “self-reinforcing or positive feedback processes” (p. 252). According to the author, increasing returns refer to the probability that “preceding steps in a particular direction induce further movement in the same direction” (p. 252). In addition, the benefits of a particular set of activities compared with other alternatives increase over time (p. 252). Pierson (2000, p. 252) further explains that the costs of switching to an alternative also rise over time.

However, other research has provided a counter argument to the overly broad (Mahoney, 2000; Page, 2006) and deterministic use of path dependence (Crouch & Farrell, 2004; Ross, 2008). Research by Crouch and Farrell (2004) and Ross (2008) has argued that institutional change contradicts assumptions regarding path dependence. The authors argue that the emergence of alternative paths provide a useful explanation for institutional change.

The literature reviewed in this Section suggests that while social institutions contribute to path-dependency, “path-breaking” institutional change can provide a basis for examining changes in web accessibility norms, values and procedures. I use this literature as a basis for examining the influence of social institutions on web accessibility and the changes that have occurred in web accessibility norms, values and procedures.

2.2 Policy Design and Diffusion

This dissertation uses research on policy design and diffusion as a point of departure for examining the relationship between social institutions and the implementation of web accessibility policies. Specifically, this dissertation uses different perspectives on policy design and diffusion to examine evidence on the design of web accessibility policies and the spread of web accessibility norms, values and procedures.

2.2.1 Policy Design

As a field of inquiry, policy design emerged from research on policy formation, in particular, studies which have focused on the mechanisms that influence policymaking (Howlett, 2010). According to Howlett (2010), early research in policy design focused to a greater extent on policy formation than implementation. Subsequent scholars broke from this tradition by focusing on broader contextual elements to policy formation, including the selection of policy instruments (Torgerson, 1990). These scholars examined not only the inputs to policy formation but also the mediating factors, principally government processes and the selection of policy instruments, which affect the impact of public policy (Howlett, 2010). Subsequent researchers, drawing upon a range of interdisciplinary

perspectives, approached the union of these two fields, policy inputs and government processes, as its own field of inquiry, policy design (Howlett, 2010).

As such, research shows that policy design consists of both policy goals and the means to achieve those goals (Howlett, 2010). This approach does not necessarily imply a straightforward, linear process or preclude the convoluted, complex, and sometimes chaotic reality behind policy formation and implementation (Capano & Howlett, 2019). As pointed out by Howlett (2010), policy design may be examined at a higher analytic level from policymaking and within a broader contextual framework, which involves multiple levels of governance and interacts with a variety of institutional constraints and opportunities for change. In addition, while focusing on government actions, policy design also concerns non-State actors who may be affected by the policies in question. Howlett (2010) puts it as

the effort to more or less systematically develop efficient and effective policies through the application of knowledge about policy means gained from experience, and reason, to the development and adoption of courses of action that are likely to succeed in attaining their desired goals or aims within specific policy contexts (p. 54)

Essentially, what Howlett (2010) describes is a contextually driven, semi-structured approach to creating evidence-based policy, which has, at its root, a core ambition connected to a set of activities.

Of particular relevance for this dissertation, is research by Schneider and Ingram (1997), who have postulated a different point of reference for policy design. The authors characterize policy design in relation to the potential beneficiaries or targets of public policy. According to the authors, policymakers may target different groups based on public perception, which can be categorized in relation to four archetypes, the advantaged, dependents, contenders, and deviants. These groups vary based on their political influence and societal perceptions of the group. For example, Schneider and Ingram (1997), consider advantaged as politically influential and enjoying a generally positive public perception. On the other end of the spectrum are deviants, who have little to no political influence and who are perceived in a negative light. Policymakers can be said to consider dependents as politically weak but perceived positively and contenders as politically strong but perceived negatively.

Historically, as described in Section 1.2.1, persons with disabilities have been seen as “deserving” social benefits (Stone, 1986). Hvinden, Halvorsen, Bickenbach, and Guillen (2017) argue that public perception may relegate some groups within the population of persons with disabilities as less able to exercise active agency and as a result, policymakers will be less concerned for members of these groups. This dissertation suggests that as dependents, persons with disabilities have, prior to the disability rights movement, been ignored by policymakers as they have been seen as politically weak. Only with the disability rights movement did persons with disabilities gain political strength, effectively moving from dependents to advantaged, and with it, policymakers, beginning in the US, began to respond by designing new policies for realizing the rights of persons with disabilities. The same could be said on an international scale for the processes leading up to the adoption of the CRPD. From a global perspective, persons with disabilities were largely considered dependents by policymakers. With the adoption of disability rights legislation in the US, UK and other countries, persons with disabilities began to gain political strength internationally. With that strength, policymakers at the UN began to increasingly turn their attention to persons with disabilities and through many hard fought negotiations and deliberations, the CRPD was adopted.

2.2.2 Policy Instruments

Within the conceptualization used in this dissertation, policy instruments may include legislative, financial and persuasive policies that aim to force or encourage market actors to achieve social objectives (Bemelmans-Vidéc et al., 1998; Hood, 2006). Hood (2006) has analysed the influence of

ICT development on the availability and use of different policy instruments. The author adopts the trichotomy of persuasive, financial and legislative policies, which was established in research by Bemelmans-Videc et al. (1998). The author argues that scholars of ICT policy should adopt existing analytic frameworks to more usefully identify the influence of ICT (p. 478). Hood (2006) examines “how far the repertoire of instruments ... has been rendered obsolete by information-age technology” and recognizes “that contemporary cyber-technology is transforming both the instrumentalities and the issues faced by contemporary government” (p. 476).

One of the principal features of policy design is the deliberate or unintentional selection of policy instruments, which Linder and Peters (1984) characterize in relation to the means by which State actors achieve policy goals. According to the authors, the selection of policy instruments is highly pertinent to the study of policy design as a variety of constraints and opportunities may affect instrument choice, which, in turn, can dictate key activities and practices in policy implementation. Howlett (2010) considers policy instruments as tools that State actors draw upon throughout the policy design process. While the selection of those tools constitutes policymaking, policy design focuses on the spectrum of policy instruments available to policymakers and the subsequent implications for implementation. This approach to policy design provides a useful connection to implementation (discussed in detail in Section 2.3 and 2.3.1) as the selection of policy instruments essentially serves as one of the principal mechanisms for shaping policy implementation.

The relationship between policy design and implementation is particularly salient as instrument selection directly affects the content and processes of implementation (Howlett, 2010). While scholars have posed several taxonomies of policy instruments, Howlett (2010) considers two common types of implementation instruments, substantive and procedural. While substantive implementation instruments focus on directly affecting the production, distribution and consumption of goods and services, procedural instruments affect the participation and behavior of policy actors involved in implementation processes. From a social regulation perspective (detailed in Section 2.3.3), implementation instruments relate to both substantive tools and procedural tools. This dissertation analyzes policy implementation tools in relation to broader voluntary and self-regulatory approaches to social regulation, where authority, to encourage compliance with and to create guidelines, codes of conduct and other indicators for web accessibility, may be shared with or devolved completely to non-State actors.

In examining web accessibility policy implementation, policy design and the selection of policy instruments serves as a unique analytic lens for scrutinizing both the substantive and procedural implementation tools used to promote web accessibility. By combining policy design perspectives with theories and models of policy implementation (as detailed in Section 2.3), this dissertation seeks a more holistic understanding of policy implementation processes, in particular the activities, roles, relationships and interdependencies of non-State actors involved in translating social regulations into practice. Models of social regulation (also detailed in Section 2.3) provide a further lens with which to analyze policy design by considering the shared competencies, overlapping arenas of influence, and shifts in authority between State and non-State actors nationally, supranationally, and internationally.

2.2.3 Policy Diffusion

Research has also used theories of policy diffusion as a mechanism for influencing policy design and for explaining institutional change (Braun & Gilardi, 2006; Dolowitz & Marsh, 1996; Hall, 1993; Hall & Taylor, 1996; Hulme, 2006; Newmark, 2002; Starke, 2013). While research has not conclusively defined policy diffusion, this dissertation conceives of policy diffusion as the spread of ideas and their subsequent influence on policy design (Dobbin, Simmons, & Garrett, 2007, p. 451; Graham, Shipan, & Volden, 2013). Sociological institutionalism provides a unique vantage point for considering policy diffusion. In sociological institutionalism, shared cultural attitudes and values influence the expectations of policy actors and their possibilities for action. From a policy diffusion

perspective, this means that the spread of ideas can create the opportunity for institutional change by introducing new possibilities for action and legitimizing certain policy approaches and organizational practices. In this sense, the spread of ideas can act as a catalyst for institutional change by advancing cultural attitudes and values that help to influence an actor's preferences by opening up new opportunities to address a particular policy problem in a culturally appropriate way.

In examining policy diffusion, several scholars have attempted to differentiate the mechanisms of policy diffusion from the outcomes of policy diffusion (Dobbin et al., 2007; Graham et al., 2013; Starke, 2013). In their survey of previous theoretical research on policy diffusion, Dobbin et al. (2007) argue that diffusion theories “seek to explain not only the general phenomenon, but also the pattern of diffusion of particular policies to certain countries at specific points in time” (p. 450). Starke (2013) similarly questions, “are policy changes really the outcome of a process of diffusion?” and “if yes, what is the mechanism underpinning this process?” (p. 561). Starke (2013) further states that research on policy diffusion has transitioned from questions related to whether diffusion occurs to how and why it occurs (p. 562). The author argues that research on diffusion must “judge whether what looks like an effect of diffusion ... did not simply come about either due to independent domestic or internal causes, a common external shock or pure chance” (p. 565). In other words, research must investigate whether diffusion occurred spuriously. The author then argues that research on diffusion must “demonstrate how—through which mechanisms—diffusion takes place” (p. 565). The author describes diffusion mechanisms as the “the processes or pathways that unfold during processes of diffusion, linking cause ... and effect” (p. 565).

Policy diffusion also relates to convergence, which may result, under certain circumstances, when diffusion leads to a situation “where most actors have adopted the same policy” (Braun & Gilardi, 2006). Convergence may refer to a variety of phenomena and may result from different causal mechanisms (Drezner, 2001; Hvinden, 2003). Starke (2013) argues that “diffusion is not the same as policy convergence” (p. 564). The author characterizes convergence as a possible outcome of diffusion stating that some countries “react in a positive way to a policy change in another country—by copying a policy—and some in a negative way—by countering innovation or through negative learning, that is, learning from ‘bad examples’” (p. 564). Thus, the author argues that “the phenomena of policy convergence and diffusion must be kept analytically distinct ... [d]iffusion is a causal process, while convergence and divergence are possible descriptions of an outcome” (p. 564).

The literature reviewed in this Section suggests that policy diffusion can provide a basis for examining the spread of ideas in the design of web accessibility policies. I use this literature as a basis for examining the spread of web accessibility norms, values and procedures from one jurisdiction to another and the role of policy diffusion processes in supporting institutional change.

2.3 Policy Implementation

Theories and models of policy implementation provide an analytic lens for investigating how social institutions and the institutional setting has influenced the implementation of web accessibility law and policy in practice. In particular, theories and models of policy implementation provide a useful perspective for analysing the mediating factors that influence the realization of web accessibility policy goals. This dissertation uses research on policy implementation as a point of departure for examining the processes involved in translating policy objectives into actions that promote or ensure web accessibility outcomes. Specifically, this dissertation uses perspectives on policy implementation to examine the relationship between web accessibility social regulations and the actions of State and non-State actors involved in promoting and ensuring web accessibility.

2.3.1 Implementation Styles

Research has examined implementation based on the sequence of events that follow from legislation – a “top-down” approach (Pressman & Wildavsky, 1973). Policy implementation from a top-down approach focuses on State-based policy actors involved in policy design. Hill and Hupe (2008) characterize top-down approaches to implementation as emphasizing the goals of a policy and the means necessary for achieving those goals. In a top-down approach to implementation, State-based policy actors provide the means and maintain responsibility for achieving policy goals.

Alternatively, a “bottom-up” approach to policy implementation emphasizes the long-term interactions among policy actors. Policy actors contribute ideas to the design of and compliance with policy objectives (Hill & Hupe, 2008; Sabatier, 1986). From a bottom-up perspective, attempts to control “street-level bureaucrats” through hierarchical coercion “simply increase their tendency to ... disregard the needs of their clients” (Hill & Hupe, 2008, p. 52). Hill and Hupe (2008, p. 53) argue that “different approaches are needed to secure the accountability of implementer, approaches that feed in the expectations of people at the local level (including ... the citizens whom the policies in question affect)”. Thus, the authors argue that adopting a bottom-up approach to examining implementation constitutes a “shift of normative concern away from questions about how those at the top can exert their wills” (p. 53).

Research has begun to search for a synthesis between the ‘top-down’ and ‘bottom-up’ approaches to examining policy implementation (Hill & Hupe, 2008, pp. 58-62; Matland, 1995; Sabatier & Mazmanian, 1980; Winter, 2012). Hill and Hupe (2008, p. 58) argue that examining a synthesis between top-down and bottom-up approaches to implementation is particularly salient for scholars of implementation, owing to the tendency in society to consider implementation only from a top-down perspective, and to oversimplify implementation as only being about compliance with clear policy directives. Sabatier and Mazmanian (1980) and later Sabatier (1986) provide an early account of research that has attempted to achieve synergy between top-down and bottom-up approaches to policy implementation. Sabatier (1986) argues for a synthesis between the two approaches that combines features of both across a longer period of time than is typical in implementation research. The author’s advocacy coalition framework integrates a largely bottom-up focus on the networks of State and non-State actors concerned with a particular policy problem with a top-down emphasis on external constraints and conditions. These external constraints and conditions structure policy design and implementation and may include, for example, choice of policy instrument, changes in the social, political and economic environments as well as processes associated with policy diffusion.

While Sabatier (1986) proposes the advocacy coalition framework as more of a methodological approach to synthesizing top-down and bottom-up approaches to implementation, Hill and Hupe (2008, p. 58) highlight the more normative dimensions to this synthesis. According to the authors, previous scholarship has focused on combining a top-down focus on responsibility with a bottom-up focus on trust. While not completely resolving the synthesis challenge, Hill and Hupe (2008, p. 79) ultimately conclude that any synthesis between top-down and bottom-up remains incomplete without considering the relationship between policy design and implementation as it occurs across multiple layers of governance and within networks of policy actors.

Research by Matland (1995) also focuses on the synthesis between top-down and bottom-up policy implementation and argues that policy ambiguity and conflict between policy actors influence implementation processes. The author argues that policies are often vague, lack specific goals and fail to provide measurable criteria for policy outcomes (p. 155). According to the author “[w]hen a policy does not have explicitly stated goals ... more general societal norms and values come into play” (p. 155). Matland (1995) continues by examining the effect of policy conflict and ambiguity stating “[p]olicy conflict will exist when more than one organization sees a policy as directly relevant to its interests and when the organizations have incongruous views” (p. 156). The author considers policy conflict in respect to “the professed goals of a policy or the programmatic activities that are

planned to carry out a policy” (p. 156). According to the author, a selection bias has occurred in policy implementation research, with top-down implementation researchers choosing clear-cut policies to investigate and bottom-up researchers choosing policies with inherent uncertainty.

Ultimately, Matland (1995) poses a model for policy implementation based on four categories, administrative, political, experimental and symbolic. In administrative implementation, low levels of conflict and ambiguity mean that implementation only involves the application of existing resources to policy outcomes. In contrast, symbolic implementation, which involves high ambiguity and conflict, typically devolves to local policy actors and locally held resources. In political and experimental implementation, which respectively exhibit low ambiguity and high conflict and high ambiguity and low conflict, Matland (1995) observes tendencies to power-driven and context-driven outcomes respectively. In political implementation, the author argues that actors can force their political will on others, while in experimental implementation, outcomes depend on the resources and actors available in a particular environment.

In terms of web accessibility, top-down approaches to policy implementation provide a useful basis for considering institutional constraints as well as the roles and responsibilities of State-based actors in policy design and implementation. From a bottom-up perspective, policy implementation provides a useful basis for analyzing the dynamic and multidimensional relations among State and non-State actors over time. This dissertation, is particularly aligned with a more synthesized approach to policy implementation and draws upon shared levels of responsibility between and among State and non-State actors as well as the role of trust in promoting and ensuring compliance. Fundamental to this inquiry are aspects of conflict and ambiguity, in particular as they relate to the design, diffusion, and adoption of technical standards in both law, policy, and practice.

2.3.2 Policy Networks

Research has adopted varying definitions and names for policy networks including transnational communities and advocacy coalitions (Djelic & Quack, 2010; Rhodes, 2006; Strom & Nyblade, 2007). This dissertation conceives of policy networks as interdependent groups of policy actors involved in designing and implementing web accessibility policies (Djelic & Quack, 2010; Reinalda, 2016; Rhodes, 2006; Strom & Nyblade, 2007). Rhodes (2006, p. 426) argues that policy networks are “formal ... and informal linkages between governmental and other actors structured around shared ... interests in public policy making and implementation”. Theories and models of policy networks provide a useful perspective for analysing the role of interdependent policy actors in relation to periods of institutional stability and change. In addition, theories and models of policy networks provide a useful perspective for analysing the relations and interdependencies among policy actors involved in implementing web accessibility in practice.

Research has characterized policy networks as interdependent interactions where policy actors share authority and maintain multiple and overlapping relationships nationally and internationally (Djelic & Quack, 2010; Rhodes, 2006). Policy networks often involve transnational business actors and nongovernmental organizations (NGOs) and operate in national and international settings (Gotz, 2016; Lindblom, 2016; Reinalda, 2016; Ronit, 2016). The interdependencies among actors can provide a useful framework for examining interest intermediation, inter-organizational relationships and cooperation between State and non-State actors. Research demonstrates that policy networks dynamically change and fluidly adapt over time (Djelic & Quack, 2010; Goodin, Rein, & Moran, 2006).

Research has examined the functional role of policy networks (Djelic & Quack, 2010; Larsson, 2013; Rhodes, 2006). Rhodes (2006) has shown that national governments rely on actors within policy networks to provide relevant knowledge during the policy design process. As a result, policy networks typically perpetuate as actors contribute to the long-term design and implementation of

policy. While the State remains an important actor in policy networks, non-State actors also provide useful knowledge and influence policy approaches (Gotz, 2016; Larsson, 2013; Lindblom, 2016; Ronit, 2016). Actors within policy networks also contribute to the translation of agreed upon beliefs into public policy (Djelic & Quack, 2010). Furthermore, actors within policy networks interact with policy outcomes and contribute to further policy design and amendment.

This dissertation uses research on policy networks as a point of departure for examining the relations among State (e.g., regulatory agencies) and non-State (e.g., private enterprises and interest organizations) actors involved in designing and implementing web accessibility policies and realizing the desired social outcomes of web accessibility in practice. Specifically, this dissertation examines the interdependencies among policy actors, which operate nationally and internationally, to explain the relationships, interactions and authority of policy actors engaged in promoting disability rights broadly and web accessibility specifically.

2.3.3 Social Regulation

This dissertation argues that theories and models of social regulation provide a useful basis to explain a particular aspect of implementation, where State actors have devolved authority to international networks of State and non-State actors. Leading scholars, such as Levi-Faur (2013); Matland (1995), point to broader changes in the role of the State as a mechanism for the adoption of social regulations. Levi-Faur (2013) argues that “the regulatory state” relies “on self-regulatory organization, enforced self-regulation, compliance systems, codes of practice, and other responsive techniques that substitute for direct command and control” and “is, therefore, about the decentering of the state, ‘rule at a distance,’ ranking and shaming and other forms of soft regulation” (pp. 36-37).

It is the relationship between State *responsibility* and *trust* in international policy networks where theories and models of social regulation provide additional explanatory value to policy implementation. Adam and Kriesi (2007) argue that government agencies, private enterprises and interest organizations depend on one another to implement regulations effectively. According to the authors, “actors are dependent on each other because they need each other’s resources to achieve their goals” (p. 129). The authors argue that State actors often take a secondary position within networks of State and non-State actors. As a result State actors do not maintain sole authority over policy implementation and must rely on inter-sectoral cooperation and decision-making (p. 132). Levi-Faur (2011) similarly refers to co-regulation as the participation of private enterprises and interest organizations in enforcing social regulations.

While this dissertation does not seek to subsume all models of social regulation within a policy implementation framework, the added value of social regulation to policy implementation revolves around the shifting power dynamics between and among State and non-State actors with particular reference to voluntary and international approaches to regulation. Research shows that approaches to regulation have changed from State-based rulemaking and enforcement to voluntary cooperation (Töller, 2011). Töller (2011, p. 500) argues that evidence exists of “a growth of [voluntary approaches to regulation] since the 1990s in some sectors”; however, “there is no overall ‘global trend’ towards [voluntary approaches to regulation] and away from traditional ‘command and control’ strategies”. The author concludes that while similar forms of voluntary regulation exist throughout the world, they nonetheless vary in form and practice (p. 500).

Research has examined voluntary approaches to regulation in the context of international regulatory regimes (Grabosky, 1995; C. Scott, 2011). While, international regulatory regimes typically encounter compliance and implementation challenges, self-regulatory approaches can support voluntary compliance by promoting cooperation between State and non-State actors (Abbott & Snidal, 2009). Abbott and Snidal (2009) argue that “multinational enterprises and global supply chains ... pose major challenges for ... action by the state or ... groups of states, acting ... to control the conduct of economic actors through mandatory legal rules with monitoring and coercive

enforcement” (p. 505). The authors characterize a new approach to international regulation, characterized by “the central role of private actors ... and the correspondingly modest and largely indirect role of ‘the state’” (p. 505). The authors continue stating, international regulatory regimes are typically organized and run by non-State actors including private enterprises and civil society organizations (p. 505). The authors additionally characterize this approach as “voluntary rather than state mandated” (p. 505).

Abbott and Snidal (2009, p. 517) have posed a typology of international regulatory initiatives including collaboration between business and NGOs. The typology first characterizes the role of the State in these joint efforts as “an orchestrator rather than a top-down commander” that is involved in “promoting and empowering a network of public, private-sector, and civil society actors and institutions” (p. 521). Second, the typology characterizes regulatory authority in joint efforts for international regulation as “decentralized, with regulatory responsibilities shared among private actors as well as state agencies” (p. 524). Third, the typology characterizes the role of expertise in joint efforts for international regulation as essential due to the complexity of regulatory problems (p. 528).

Research has analysed the efficacy of self-regulatory approaches (Ayres & Braithwaite, 1992; Ogus, 1995; Töller, 2011). Ayres and Braithwaite (1992) and Ogus (1995) indicate that self-regulation involves a shift in the authority and costs of policy design, monitoring and compliance to private enterprises. Ogus (1995) and Töller (2011) further indicate that self-regulation typically results in a decrease in efficient and effective monitoring and enforcement, an increase in symbolic compliance, and an opportunity to both subvert the intent of the law and engage in anti-competitive practices.

In terms of policy design, social regulation may be considered as another approach to examining the mechanisms that drive policy formation and instrument selection. However, while recognizing the relevance of social regulation for policy design, this dissertation uses research in social regulation as a point of departure for examining shifts in regulatory responsibility from State to non-State actors and from national to international regulatory regimes. These shifts have involved both changes in *responsibility* for policy design and implementation as well as changes in how *trust* is structured in promoting compliance in voluntary approaches to regulation. In addition, social regulation provides a locus of investigation that shifts concern away from creating clear divisions between policy design and implementation to consider the role of *ambiguity* and *conflict* as a driver of both policy design and implementation across multiple levels of governance and in interaction with national and international networks of policy actors.

Overall the literature on social regulation suggests that a broad range of regulations exist and vary based on the actors involved, the regulatory aim or outcome and the approach. This dissertation examines the variation and differences that exist in social regulations for web accessibility in the UK, Norway and the US. This dissertation uses research on social regulations as a point of departure for examining different choices in policy instruments and the implementation of voluntary approaches for ensuring web accessibility. In particular, this dissertation uses models of social regulation to explain the relationships between State and non-State actors on national and international levels with particular reference to the relationship between State authority and international regulatory regimes for web accessibility.

2.4 Outcomes

Research has examined policy implementation in terms of *outputs* – what policy-related actions or activities occur and *outcomes* – what policy achieves (Bovaird, 2014; Grumm, 1975; Hoque, 2008; Levy, Meltsner, & Wildavsky, 1974). This dissertation examines web accessibility as a *desired social outcome*, which extends beyond the boundaries of the State and beyond the explicit objectives of a particular policy. In other words, the empirical analyses that form the basis of this dissertation focus

on the web accessibility norms, values and procedures that exist both within and outside the jurisdiction of the State. Those norms, values and procedures are both explicitly articulated in web accessibility policies and implicitly present in social and organizational responses to web accessibility policy. Thus, this dissertation frames the implementation of web accessibility policy in relation to *outputs* – i.e., the actions and activities of State and non-State actors, *policy outcomes* – i.e., that a website is accessible according to the stated aims and requirements of a particular policy, and *social outcomes* – i.e., web content that is usable by persons with disabilities (Kubicek & Aichholzer, 2015). The differentiation between *policy outcomes* and *social outcomes* is useful for understanding the potential gaps between organizational compliance with web accessibility policies, typically web accessibility standards, and the barriers that persons with disabilities may continue to experience using the web.

In terms of social regulation, policy outcomes relate to compliance with regulatory goals or requirements (Levi-Faur, 2011). Research on regulatory compliance has examined the conflicting interests of regulators and private enterprises (Hardin, 2007). Ayres and Braithwaite (1992) illustrate the conflicting interests involved in enforcing regulatory compliance stating, “the motivation of the firm is to minimize regulatory costs and the motivation of the regulator is to maximize compliance outcomes”. In response, the authors argue for a “tit-for-tat” enforcement strategy where regulators avoid penalizing cooperating firms and only shift to imposing penalties for stronger transgressions (p. 21).

Models of regulation have used the strategic choices of policy actors to explain interest conflict. Policy actors encounter conflicting incentives that simultaneously promote and obstruct efforts to achieve compliance. To resolve the conflicting incentives and manage noncompliance, research on responsive regulation suggests using a range of interventions including informing and persuading, publicly discouraging noncompliance, auditing, and financially penalizing noncompliance (Ayres & Braithwaite, 1992). By adjusting the regulatory strategy and associated intervention, regulators can enhance incentives for compliance and diminish incentives that obstruct compliance.

Cooperation between State and non-State actors aims to incentivize compliance by encouraging voluntary agreements and compromises (Potoski & Prakash, 2011). According to Potoski and Prakash (2011), “[r]egulated firms can cooperate by making good-faith efforts to comply with regulations and voluntarily disclosing their ... violations” and “government regulators can cooperate in regulatory enforcement by forgiving minor regulatory violations and working with firms to solve the root causes of non-compliances” (p. 84). In addition, the authors argue that firms can establish credibility by voluntarily adopting guidelines or codes of conduct (p. 90). The author goes on to state “[t]he goal of a voluntary program is to induce participating firms to produce some positive social good beyond what government regulations require” (p. 90).

The literature reviewed in this Section suggests that a variety of voluntary approaches to web accessibility have emerged and that compliance with web accessibility policies involves conflicting incentives for regulators and private enterprises. I use this literature to examine the incentives and disincentives that influence the approaches of private enterprises and regulatory agencies in ensuring compliance with social regulations for web accessibility.

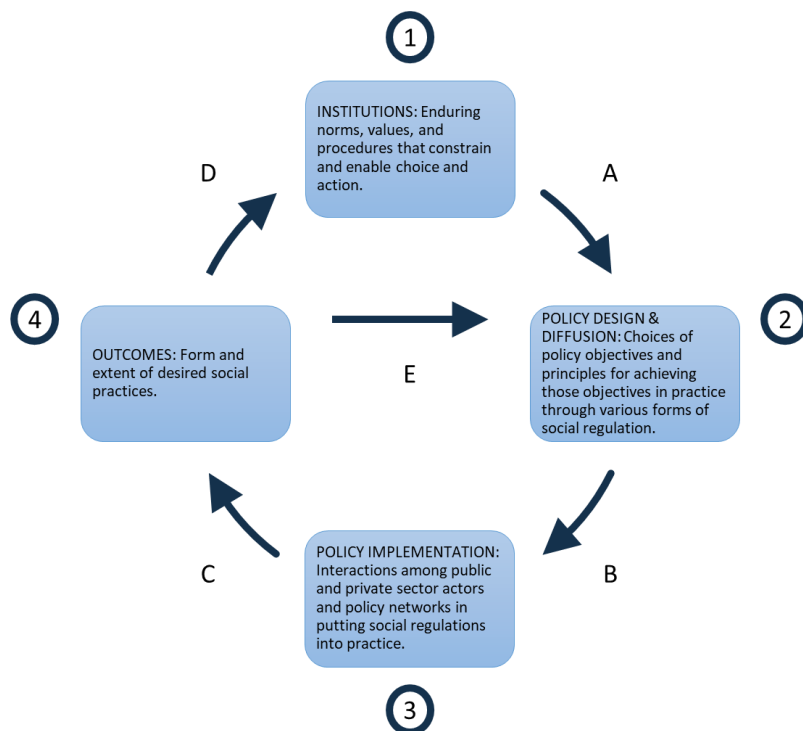
2.5 Summary

In sum, the literature reviewed in Section 2 suggests that the design and implementation of web accessibility policies is neither a straightforward linear process nor a process that occurs only at the behest of State actors. Rather, the literature suggests that providing a holistic account for policy design and implementation requires an investigation of web accessibility from several different analytic perspectives.

In order to investigate the multidimensional processes and relationships that occur as part of web accessibility policy design and implementation, I have modelled several analytic concepts that I will use to frame the data collection (described in Section 3) and empirical analyses (captured in Papers I to VI) and provide a reference for using the data to question the assumed relationships captured in the model (see Section 6). While acknowledging that a more parsimonious analytic framework may provide a more straightforward approach to framing data collection and analysis, the four analytic concepts used in this dissertation have evolved over the course of this research (see Table 1) and has acted as a continuous point of reference and reflection in the data collection and analysis. Further, this dissertation argues that, while complex, this set of analytic concepts provide a more valuable framework for examining the elaborate and often convoluted relationships between the actors, behaviours, and meta-level norms, values, and procedures that have emerged as themes in the data collection and analysis than any subset of those same concepts.

Figure 1 poses an analytic model of the interrelationships between the four well established concepts that are used in this dissertation as a means for framing the investigation of web accessibility policy design and implementation (Schlager, 2007). Though Figure 1 provides a visualization of the four concepts reviewed in Sections 2.1 to 2.3, the relationships among these concepts are not mutually exclusive. As pointed out in Sections 2.1 to 2.3, including the related fields of research reviewed in the sub-sections, these concepts form a complex framework of overlapping processes, actors and behaviours involved in designing and implementing social regulations for web accessibility as well as locus of investigation for considering the institutional norms, values and procedures that influence web accessibility policies and practices. Figure 1 provides a visual point of reference for the influence of social institutions and the activities of public and private actors related to the design and implementation of social regulations for web accessibility. Over the course of the research leading to this dissertation, Figure 1 has provided a useful and holistic basis for illustrating and framing the intricate and complex concepts that are involved in web accessibility policy design and implementation.

Figure 1: Model of the dynamic relationships among analytic concepts



In Figure 1, part one, *institutions* almost by definition pre-date policy design and implementation. By considering time or temporality we are able to distinguish analytically between the effects of social institutions and the practices of public and private actors. In other words, this dissertation adopts an *historical institutionalist* approach to examining policy implementation and in doing so, provides a useful basis for investigating the influence of *social institutions*, which are part of the implicit motivations of policy actors, on the explicit actions and activities of policy actors. This dissertation further adopts a *sociological institutionalist* approach to examining the role of cultural attitudes and values in determining the organizational practices that State and non-State actors have adopted in response to the design and implementation of web accessibility policies. *Sociological institutionalism* also provides a useful point of reference for considering the variety of mechanisms that may contribute to institutional change. In part 1 (A), Figure 1 suggests that *historical* and *sociological institutions* constrain and enable policy actors to participate in policy design and diffusion processes.

In the second part, Figure 1 suggests that *policy design and diffusion* processes contribute to establishing and spreading new or modified institutional norms, values and procedures. While analytically, *policy design and diffusion* may be considered separately, this dissertation adopts an integrated approach to analysing *policy design and diffusion* as the ideas underpinning web accessibility have spread among national and supranational levels of governance in policy formation and the selection of social regulatory instruments. On one hand, theories of *policy design* help frame the contextually driven, historically contingent approaches to formulating and selecting policy instruments. On the other hand, theories of *policy diffusion* provide a separate framework for considering the spread of knowledge and ideas related to the social regulation of web accessibility

and relevant norms, values, and procedures. While the data collected as part of this dissertation shows little evidence for the strategic choices of policy actors in web accessibility, the joint *policy design and diffusion* paradigm provides a useful point of reference for considering both the stability of institutions in a historical institutionalist sense and the opportunities to create arenas for change in a sociological institutionalist sense. Figure 1, part 2 (B), suggests that policy design and diffusion have an effect on policy implementation, both in terms of policy formation and instrument selection, as well as the diffusion and adoption of various national and international forms of social regulation. A social regulatory approach to web accessibility has affected policy design processes by introducing new forums for policy formation and new instruments for policy selection.

Figure 1, part three, suggests that *policy design and diffusion* are related to and have an effect on *policy implementation* processes. This dissertation considers *policy implementation* in reference to social regulations and policy networks. However, this does not reduce policy implementation to an enforcement mechanism for social regulation. In contrast, this dissertation acknowledges the relationship between *policy design* and *social regulation* in terms of the mechanisms associated with policy formation and the selection of policy instruments. This relationship is particularly salient in the selection of policy instruments used to support voluntary approaches to regulation. As such, this dissertation uses *social regulation* as a point of departure for considering the nexus between *policy design* and *implementation* on an analytical level while giving weight to the operationalization of *social regulation* in practice as a component of policy implementation. The operationalization of *social regulation* in web accessibility relates primarily to shifts in *responsibility* from State to non-State actors as well as an increasing *trust* in international policy networks. Further, models of *social regulation* have provided a useful reference point for examining the role of *ambiguity* in compliance and the role of *conflict* in the dynamic relations among State and non-State actors on both national and supranational levels.

In Figure 1, part 3 (C), *policy implementation* concerns how *public and private sector actors* respond to the various policy instruments that governments have used to promote web accessibility. While public and private sector actors deal categorically with the various organizations targeted by web accessibility policies, this dissertation recognizes that on a more granular level, web accessibility policies must influence outcomes generally – i.e., desired social practices, and specifically the behaviour of managers, web developers, and procurement personnel in order to ensure web accessibility in practice. For the purposes of this dissertation, public and private sector actors refer categorically to the organizations targeted by web accessibility policy and specifically to the employees within those organizations responsible for realizing web accessibility in practice including managers, web developers, and procurement personnel. In terms of *policy implementation*, these actors and the relevant personnel charged with meting out organizational practices for web accessibility represent a central focus of this dissertation. It is the behaviour of these actors that broader national and international policy networks have sought to influence. Returning to the overlapping relationship between policy design and implementation, one key consideration of this dissertation is the extent to which actors involved in the implementation of web accessibility policy have also participated in policy design.

Finally, in Figure 1, part four, web accessibility *social outcomes* contribute to continuity or change in social institutions and may also inspire actors to pursue new efforts in policy design and look for ideas and inspiration from other countries. Figure 1, part four (D), shows that this process may act as a mechanism for *institutional change*. Social outcomes of web accessibility may catalyse institutional change by affecting, on one hand, public and private sector norms, values and procedures and on the other hand, the default and implicit assumptions that exist in web accessibility policy and practice. Figure 1, part four (E) shows that *social outcomes* also influence *policy design and diffusion* as web accessibility policies in one jurisdiction have diffused internationally and served as inspiration for *policy design* in other jurisdictions. In addition, international organizations have contributed to the diffusion of web accessibility policies and practices on both national and supranational levels.

This dissertation is particularly concerned with *social outcomes* for web accessibility on two levels. First, this dissertation is concerned with *social outcomes* as they directly relate to issues of compliance with *social regulations* for web accessibility. Compliance from a *social outcomes* perspective may be conceived broadly to include both legal compliance with legislative policies as well as varying forms of voluntary compliance with social regulations. Second, this dissertation is concerned with *social outcomes* as they indirectly relate to influencing institutional norms, values and procedures. This conceptualization of *social outcomes* focuses on organizational practices as well as organizational norms, value systems, levels of awareness, and attitudes as they pertain to web accessibility.

Table 2 provides a brief synopsis of the empirical research captured in papers I to VI in relation to the analytic concepts captured in Figure 1. Paper I aims to investigate the relationship between social institutions that pre-date the design of web accessibility policy in two cases – the UK and Norway (Figure 1, parts 1 and 2). Paper II aims to provide an in-depth investigation of a single case – the UK – and the role of State and non-State actors in the design of web accessibility standards as a form of social regulation (Figure 1, parts 2 and 3). Paper III aims to examine policy diffusion from an institutional perspective by investigating processes of policy diffusion and the influence of policy diffusion on the approaches to web accessibility social regulation in the US and Europe (Figure 1, parts 1, 2 and 3). Paper IV adopts a bottom-up perspective to diffusion and investigates the dynamic, interdependent relationships among State and non-State actors – primarily in the US and EU – on one hand and the role of web accessibility outcomes on the design of public procurement standards on the other (Figure 1, parts 2, 3 and 4). Paper V targets the role of interest organizations as intermediaries between State and non-State actors and examines the interactions between interest organizations and non-State actors in realizing web accessibility outcomes and framing those outcomes in relation to new institutional norms, values and procedures (Figure 1, parts 1, 3, and 4). Finally, paper VI returns again to the relationship between non-State actors in policy implementation and specifically examines the interactions between non-State actors in producing new forms of social regulation including voluntary audit and certification schemes (Figure 1, part 3).

Table 2: Overview of empirical papers in relation to analytic concepts posed in Figure 1

Paper I	Parts 1 and 2 – influence of institutions on policy design
Paper II	Parts 2 and 3 – participation of State and non-State actors in the design of social regulations
Paper III	Parts 1 and 2 – influence of institutions on policy diffusion Parts 2 and 3 – influence of policy diffusion on approaches to social regulation
Paper IV	Parts 2, 3 and 4 – interaction between non-State actors and outcomes on policy design and diffusion.
Paper V	Parts 1, 3, and 4 – relationship among State and non-State actors in producing outcomes and institutionalizing new norms, values and procedures
Paper VI	Part 3 – interactions among non-State actors in creating new forms of social regulation

In sum, the model posed in Figure 1 provides a basis for specifying and investigating the potentially salient relationships and processes involved in designing and implementing social regulations for web accessibility. It acts as a framework for interpreting the elaborate, in-depth qualitative data that was used as a basis for papers I to VI and a basis for querying theoretical assumptions, discussed in

Section 6.3 – i.e., by empirically confirming or extending how those assumptions operate in the implementation of web accessibility law and policy.

3. Methods, Data and Analysis

The literature reviewed in Section 2 shows that web accessibility is a multidimensional phenomenon with a variety of potential causal mechanisms and a variety of potential outcomes. In other words, web accessibility outcomes change over time and within different socio-cultural and organizational contexts. Web accessibility also results from the complex interactions between a person with any of a broad range of sensory, physical and cognitive impairments, and a multitude of systemic barriers that they experience when using the web.

While this dissertation has focused largely on the barriers that persons with visual impairments experience using the web, web accessibility policies typically cover persons with other sensory impairments, such as hearing impairments; persons with physical impairments, such as reduced dexterity; or persons with cognitive impairments, such as dyslexia. By way of example, to ensure web accessibility for persons with disabilities, web developers must, among other things, provide closed captions in videos for persons who are deaf or hard of hearing, ensure that interactive elements on a website are compatible with the alternative input devices used by persons with limited dexterity and use fonts designed to be readable by persons with dyslexia.

Due to the complexity of web accessibility as a social phenomenon, this dissertation has adopted a four-part framework (summarized in Section 2.5) for examining policy design and implementation that includes a focus on 1) social institutions, 2) processes of policy design and diffusion, 3), policy implementation including approaches to social regulation and the interactions among networks of public and private actors, and 4) web accessibility outcomes. In-depth case study methods combined with multiple sources of qualitative data and multiple forms of data analysis provide a reasonable approach for examining the complex and multidimensional concepts, their interdependent relationships, and the mechanisms and processes that underpin the design and implementation of web accessibility policy.

This dissertation uses comparative and single case studies to examine the design and implementation of web accessibility policies. Comparative case studies allow investigators to juxtapose the similarities and differences of “large macrosocial units” such as countries (Mahoney & Villegas, 2007; Ragin, 1987, p. 1). This dissertation adopts a case study approach and uses the State as a primary unit of analysis.

Case studies provide a useful approach for examining the design and implementation of web accessibility policy in three ways. First, case studies provide a basis for exploring the relationships among national and international policy actors involved in web accessibility. Second, case studies provide a basis for interpreting historical events and national trajectories. Third, case studies provide a basis for analysing the social institutions of policy implementation in different national contexts.

This dissertation uses qualitative data collection and analysis to provide empirical support for a series of single and comparative case studies. Qualitative methods provide a useful approach for interpreting prior policy models and providing new explanations to extend previous research. Qualitative data collection and analysis also provides a useful approach for examining the design and implementation of web accessibility policies in three ways. First, qualitative methods provide a basis for exploring the character and variety of relationships among policy actors. Second, qualitative methods provide in-depth knowledge on national approaches to web accessibility policy. Third, qualitative methods provide a basis for examining social institutions in historical and contemporary settings.

3.1 Case Study Method: combining single and comparative case studies

Case studies provide a useful research design for examining policy implementation. Research demonstrates that case studies provide a useful approach for examining a current phenomenon in context, where investigators have limited to no control over events (Yin, 2013). George and Bennett (2005) describe case studies as an “instance [case] of a class of events [phenomenon]” (p. 18). Yin (2013) provides a more detailed description of case studies as empirical inquiries that “investigate a contemporary phenomenon in-depth and within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident” (p. 13). Thus, case studies provide a holistic examination of the meaningful characteristics of real-life events and provide a useful research design for understanding complex social phenomena. (Yin, 2013).

Case studies can also provide detailed explanations of the processes that cause a particular phenomenon (Boix & Stokes, 2007; George & Bennett, 2005). By detailing causal processes, case studies may identify new variables and hypotheses (George & Bennett, 2005; Mitchell, 1983). The results of case studies allow investigators to expand and generalize theories (Boix & Stokes, 2007; George & Bennett, 2005; Mitchell, 1983; Yin, 2013). Thus, rather than generalizing statistically by “enumerating frequencies”, case studies generalize to “theoretical propositions” (Yin, 2013, pp. 35-40). Case studies can inform theory and models of policy implementation by evaluating theoretical assumptions and extending models of policy implementation by identifying new and potential causal conditions and areas of exploration (Bennett, 2001; George & Bennett, 2005, pp. 21-22).

A single case study provides an opportunity to conduct an in-depth examination of a phenomenon in a unique context. However, comparisons between cases enhance the case study approach by providing a basis to examine cross-societal differences and similarities. The addition of multiple cases also provides an opportunity to compare the implicit norms of web accessibility by examining the assumed and unstated values of policy actors.

By comparing countries, case studies can reduce the ideographic character of single country studies. Comparative case studies consist of two units of analysis, “observational units” (e.g., data on cases) and “explanatory units” (e.g., theories and models) (Ragin, 1987, p. 11). Rather than focusing on explaining variation, “observational” and “explanatory” units demonstrate patterns of association and provide a basis for identifying intervening mechanisms that connect conditions and outcomes. Comparative case studies use chronological connections and outcomes to understand historical causes (Bennett & Elman, 2006). Thus, comparative case studies provide a useful approach for understanding, explaining and interpreting different historical outcomes. In addition, research demonstrates that comparative case studies do not consist simply of cataloguing and explaining similarities and differences but provide an analytical interpretation of the data to infer the trajectories of different countries (Mahoney & Villegas, 2007; Ragin, 1987).

Research has used Mill’s “method of agreement” and “method of difference” to guide case selection (George & Bennett, 2005, p. 77; Mahoney & Villegas, 2007). While both case selection methods have limitations, the “method of agreement” attempts to identify a similar condition associated with a common outcome (George & Bennett, 2005). Alternatively, the “method of difference” attempts to identify the conditions associated with different outcomes. Mill’s method of agreement and difference parallel the “most different” and “most similar” comparative case study research designs (George & Bennett, 2005). Most different research designs compare cases that differ as much as possible to identify patterns and changes that agree, and most similar research designs compare cases that resemble each other as much as possible to identify patterns and changes that differ.

This dissertation adopts a combination of single (Papers II, III and IV) and comparative (Papers I, V and VI) case study approaches and uses the State as a primary observational unit of analysis. Research demonstrates that using the State as a unit of analysis assumes the analytical significance of

the State (Wimmer & Glick Schiller, 2002). However, the web exists as an international information and communications network and the design and implementation of web accessibility policies have occurred on a global scale – i.e., within the UN and international standards organizations. Thus, web accessibility policy implementation has transcended the boundaries of the State and as such requires an additional emphasis on the theoretical relationships among transnational actors. While this dissertation has adopted the State as the observational unit of analysis, this dissertation uses policy network theory as basis for extending the comparative case study approach beyond the traditional boundaries of the State. As such, while this dissertation uses a comparative case study approach to examine the different social, political and cultural approaches to implementing web accessibility in the UK, Norway and the US (Papers I, V and VI), and single case studies to investigate paradigmatic national (Paper II) or international policy processes (Papers III and IV).

The comparative case study design has the added value of providing a locus of investigation and revealing salient insights in each cases' approach to web accessibility. Differences in policy design and implementation become salient when, generally-speaking, two cases are expected to be similar. Conversely, similarities provide useful insights when two cases' approaches to web accessibility policy design and implementation are expected to be different. Taken together, the three cases provide a useful basis for considering more nuanced differences – i.e., when all cases diverge – as well as broader themes – i.e., when all cases converge – in web accessibility policy design and implementation. Section 3.2 continues by considering the similarities and differences among the cases as well as articulating the basis for comparing the three cases.

3.2 The Cases

The papers that form the basis of this dissertation use empirical data from the UK, Norway and the US to investigate the variety of approaches used in designing and implementing web accessibility policies. The UK, Norway and the US share the same basic political institutional structures including doctrines related to the rule of law, separation of powers, democratic elections, and protection of human rights. However, the choice of cases gave the possibility to study differing legal cultures, regulatory environments and policy instrumentation and their interrelationships.

Although the UK-US comparison may be compared as most different cases, due to their parliamentary and presidential systems respectively, this dissertation focuses on the design and implementation of *social regulations*. While research has posed a number of typologies and frameworks for comparing nation-States, including Esping-Anderson's (1990) oft-cited welfare State regimes and Hall & Soskice's (2001) varieties of capitalism, this dissertation is principally concerned with what Levi-Faur (2013) refers to as the regulatory State. In this context, the most relevant feature of the UK-US comparison is not their systems of government, commodification of labour, or even their economic institutions, but their similar historical trajectories in social regulation (Braithwaite, 2006; Levi-Faur, 2013; Levi-Faur & Gilad, 2004; Majone, 1997; Moran, 2003).

Research has not yet posed a typology of the regulatory State, owing in part to its amorphous structure that blends national and international regulatory institutions. Therefore, this dissertation argues that the most appropriate basis for comparing the UK, US and Norway is their historical approaches to social regulation. Therefore, this dissertation argues that the UK-US comparison represents a most similar case study design due to their history of deregulation. Scholars have shown the global trend towards deregulation, and the UK and US have acted as progenitors in this area (Jordana & Levi-Faur, 2005). As a result both countries have a long history for devolving regulatory authority to private enterprises and civil society and adopting different forms of self-regulation.

While this does not preclude significant differences between the UK and US approaches to social regulation, it does offer a point of departure for considering whether those differences retain salience with respect to web accessibility. Here, the evidence (discussed in Section 6) offers surprising

insights. On one hand, it confirms the similarities between the UK-US comparisons – i.e., both rely more heavily on social regulations as opposed to welfare provision and both countries were early adopters of disability antidiscrimination legislation. On the other hand, the evidence shows salient differences when it comes to issues such as regulatory enforcement and the adoption of web accessibility standards – i.e., the UK is decidedly more administrative than the adversarial legalistic approach used in the US and has promoted the adoption of voluntary standards to a greater extent than the US (Kagan, 2001). This is only to point out that while in this dissertation the UK-US comparison follows the most-similar case design, the UK may also be seen as an intermediary case that has adopted a more social regulatory approach than Norway while retaining key differences from the US (Halvorsen, 2010; Moran, 2003). The US-Norway comparison is clearer cut and, in most respects, adheres to a most different case design.

The aspects of this dissertation that use a comparative case study design aim to isolate and reveal unanticipated similarities and differences that occur in each cases' approach to web accessibility policy. As an intermediary case the UK provides a useful point of reference for revealing differences in the UK-US comparison and similarities in the UK-Norway comparison. When taken together, the three cases may also reveal trends towards convergence as the three cases represent three different approaches to the regulatory State – i.e., the US as the quintessential regulatory State, the UK as a variation of the regulatory State, and Norway as the quintessential social welfare State.

The US has acted as a leader in adopting social regulations for employers and service providers (Levi-Faur, 2005). The US, to a more limited extent than Norway, has used social provisions to ensure personal assistance, reimbursement of disability-related expenses and income maintenance schemes (Halvorsen, 2010). The US has also emphasized the use of public procurement policy as a financial incentive for enterprises to create accessible ICT products and services (Astbrink & Tibben, 2013). However, as US disability antidiscrimination legislation emerged before the widespread adoption of ICT including the web, legislators were unable to anticipate the need for and include web accessibility provisions in the ADA.

In contrast to the US, Norway has a tradition of economic redistribution to enhance social participation and inclusion of persons with disabilities – the US has largely adopted social regulations to accomplish similar policy goals (Burke, 2002; Esping-Andersen, 1990; Halvorsen & Hvinden, 2009). Norway has a generous national system for providing practical assistance, education and economic support, and the government has acted reluctantly to adopt social regulations (Hvinden & Halvorsen, 2003). Historically, interest organizations have collaborated with State actors to ensure and expand social benefits for persons with disabilities. Initially, regulatory agencies in Norway adopted a voluntary and persuasive approach to web accessibility and attempted to encourage compliance by issuing guidelines, action plans and public evaluations. Indirectly influenced by the EU and Council of Europe, the Norwegian government adopted disability antidiscrimination legislation after the US and UK and after the broader adoption of ICT. As a result, Norwegian legislators had to opportunity to adopt ICT accessibility requirements in antidiscrimination legislation. Unique among the three cases, Norwegian regulatory agencies have legally obligated compliance with international web accessibility standards.

The six empirical papers, which form the basis of this dissertation, have, to varying extents, made cross-country comparisons where appropriate. In certain instances, where the papers have focused to a greater degree on a single case study, I have done so deliberately in order to build towards a fuller understanding of the design and implementation of web accessibility policy.

3.3 The Data

To understand the approaches to web accessibility policy in the UK, Norway and the US, I collected data on the social institutions involved in policy implementation. The data provide manifest and

latent content on the social institutions involved in implementing web accessibility policies (Berg, 2001). Manifest content refers to the actual words and expressions used in documents and interviews that demonstrate the strategic objectives and values of policy actors. Manifest content provides clear and explicit evidence on the social institutions of web accessibility. Alternatively, latent content refers to the implicit objectives and assumed values of policy actors. Latent content provides a basis for interpreting meaning and inferring the unstated norms of web accessibility. However, inferences based on latent content require corroboration with independent sources of data (Berg, 2001). This dissertation uses multiple sources of data to corroborate inferences based on latent content and describes the inferences by providing detailed descriptions of the explicit narratives and the implicit meanings inferred from the data.

The data include documents and interviews with policy actors. Data collection occurred from 2011 to 2015. Data collection aimed to understand the experiences of policy actors involved in web accessibility. This dissertation adopts a qualitative approach to data collection and analysis and emphasizes reflexivity. Reflexivity refers to the interaction between the researcher and data collection and analysis, where self-reflection on behalf of the researcher influences the investigation (Miles & Huberman, 1994). Thus, reflexivity involves continuously adapting data collection and analyses based on the results of prior data collection and analyses.

3.3.1 Documentary Data

I accessed publicly available policy documents on the web. Sources included national and international laws, regulations, policies, government research and reports, standards and guidelines, and media reports; and organizational practices and procedures, memos, and correspondence.

I selected policy documents based on an *a priori* search criteria that included web accessibility and related concepts, such as ICT accessibility and usability, universal design, the digital divide and social inclusion, disability rights, regulation and standardization, and monitoring and enforcement. As I located relevant documents, I searched within the document for potentially useful references, authors and research projects. From this collection of search terms, I created alerts in Google Scholar (Google, 2014a). Google Scholar indexes peer-reviewed academic articles, books and case law. Google Scholar provides an automatic email alert of newly available documents that meet specified search criteria. In addition, I located policy documents on the web through web searches, from references by interview participants, through discussions with other practitioners and researchers and as referenced in email newsletters.

The document data collection aimed to include all documents with direct relevance to web accessibility supranationally (e.g., documents from the EU, UN and international organizations) and nationally from the UK, Norway and the US. The documentary data primarily spanned from the 1970s, with the introduction of disability antidiscrimination public procurement legislation in the US, to the mid-2010s, with the introduction of web accessibility policies in Norway. The document data collection also included select documents covering related topics and documents specific to other countries such as Australia, Canada, Ireland, Spain, New Zealand and Qatar. These countries provided a useful basis for understanding the policy approaches used outside of the selected cases. Table 3 provides an overview of the document archive used in this dissertation. While I located most of the policy documents in English or English translation, language barriers limited a more comprehensive approach to data collection in Norway and other countries. For non-English language documents, I used automatic translation services such as Google Translate to provide an English translation (Google, 2014b). While Google Translate does not ensure the same accuracy as a professional translation service, the translated documents typically provided a fundamental basis of understanding. I subsequently corroborated inconsistencies or ambiguities with a native speaker.

Table 3: Overview of Document Data Archive

<u>Source</u>	<u>Documents</u>
UK	72
US	65
Norway	43
EU	83
International Organizations	61
Total	334

Policy documents included publicly available and archived sources. Archived sources, including policies and websites, do not appear in public web searches; thus, I retrieved archived sources using the Internet Archive (Internet Archive, 2013). Archived sources provided an opportunity to collect data on the explicit social institutions relevant at the time the policies emerged. I stored the policy documents electronically as Portable Document Format (PDF) files, and I stored websites on the web using Perma.cc, which creates an unalterable instance of a website (Perma.cc, 2014).

3.3.2 Interview Data

Semi-structured interviews provided an additional source of corroborating data on the social institutions involved in implementing web accessibility policies. I interviewed key policy actors involved politically or technologically with web accessibility. The majority of the participants have worked with web accessibility for 10 years or more, and many participants commented or provided accounts on events that occurred since the 1970s. The participants took part in the interviews as spokespersons of their respective organizations, and I took their responses to the interview questions as representative of their organizations' culture and practice. Where participants expressed matters of personal opinion, their responses were taken as anecdotal and not indicative of the broader organization.

While I recognize persons with disabilities act as consumers, citizens and non-policy actors and can provide useful perspectives on outcomes related to web accessibility policies, this dissertation focuses specifically on implementation processes. Thus, I purposively selected policy actors with substantial experience and knowledge in web accessibility to provide information on the social institutions involved in policy implementation.

The interviews used in this dissertation broadly resemble expert interviews. The use of expert interviews in social and political science has a long history, and has practical and methodological benefits for scholars including the opportunity for collecting concentrated data more efficiently, gaining access to other experts, and providing insights for complex and abstract phenomena (Bogner, Littig, & Menz, 2009). As such, expert interviews may provide more than basic factual information and instead, through the use of quality assurance techniques, support the interpretation of latent content. Scholars have begun to move away from conceptualizations of experts that are clearly differentiated from lay persons to conceptualizations of experts as representatives of public and private sector organizations that interact within international networks of actors engaged in producing knowledge and influencing policy design and implementation (Bogner et al., 2009; Meuser & Nagel, 2009). Bogner and Menz (2009) argue that experts are particularly useful in policy research because they are in a position to actually put their accepted norms, values and procedures into practice.

I recruited experts that have had roles in shaping web accessibility as a field of social and political inquiry and as a practice-based process of ICT development and policy implementation (Bogner et al., 2009; Meuser & Nagel, 2009; Stephens, 2010). The interviews aimed to capture both the experiences of the participants and the participants' interpretations of others' experiences. Participants provided both domain knowledge about web accessibility and experiential knowledge about their personal involvement in the field.

Interview participants represented a variety of public, private and civil society organizations including: businesses, non-profit organizations, "business-like" non-profit organizations, business subsidiaries of non-profit organizations, consultants, regional and national public agencies, semi-autonomous public agencies, regulators, public-private coalitions, advocacy organizations, standards organizations and international non-governmental organizations. I recruited participants via professional connections, and through LinkedIn, a professional social networking website (LinkedIn, 2014). During the interviews, I asked participants to refer other potential participants, a technique known as "snowball sampling" (Miles & Huberman, 1994).

The connections, established through professional relationships, LinkedIn and snowball sampling, provided a basis for establishing rapport with the participants. I presented my background and interests to the participant and the justification for my research, and after establishing rapport, I provided an informed consent form (Appendix A). The informed consent form documented the objectives of the research, security and privacy protections and contact information regarding participation, questions or feedback. I invited 95 individuals to participate in a 60-minute interview, and I conducted 51 interviews. While the 46% attrition rate may introduce selection bias owing to the interest of the participants in the topic of the study, this dissertation argues that the attrition rate may result from the recruitment methods – i.e., online through social media – and that any selection effect may be mitigated by the deliberate and successful recruitment of web accessibility experts from a variety of organizational backgrounds. Table 4 provides an overview of the interviews by organization type and country.

Table 4: Overview of Interview Participants

<u>Organization</u>	<u>UK</u>	<u>US</u>	<u>Norway</u>
Interest Organizations	3	11	4
Public / Private Hybrid	2	0	0
Private Enterprises	3	3	1
Public Agencies	1	8	3
Regulatory Agencies	1	5	1
Standards Organizations	1	3	1
Total	11	30	10

Though the interviews did not explicitly request information on disability, 20 participants self-identified as having personal experience with a physical, sensory or cognitive disability. I conducted the interviews in locations convenient to the participants including participant's homes and offices, restaurants, public events and, in a small number of interviews, over the phone. Interviews lasted 52 minutes on average.

I wrote field memos before and after the interviews. Field memos provided useful data on the interview setting and included pre- and post-evaluations of the interview. The field memos also provided an opportunity to re-evaluate and restructure subsequent interviews. After obtaining informed consent, I audio recorded the interviews using two different mobile devices and transcribed the recordings using a foot switch and audio transcription software program. I conducted the interviews in the UK, Norway and the US from 2012 to 2015. The interviews produced over 36 hours of audio recordings, and the interview transcriptions totalled over 245,000 words. I used an interview guide to structure the interview, though I allowed participants to pursue other topics of interest. In addition, where a participant demonstrated knowledge or experience in a particular area of web accessibility (e.g., standardization, lobbying, litigation, testing, or technological development), I adjusted the interview questions to investigate the participant's relevant expertise.

The interview guide (see Appendix B) focused on web accessibility as a technological, social and political phenomenon. I drafted and pilot tested the interview guide on seven participants in the UK. The initial interviews provided three results that informed and validated further data collection. First, participants did not differentiate between specific concepts. When asked about collaboration with other State and non-State actors, participants typically did not differentiate between an organization's national and international operations. In addition, when asked about opportunities for achieving accessibility, participants did not differentiate between the act of removing barriers for accessibility and the more abstract objective of improving levels of accessibility. I amended the interview guide to add space for discussion of the opportunities for collaboration and improving accessibility.

Second, participants responded extensively to questions about lived experiences as opposed to questions about abstract perceptions. When asked about personal experiences with accessibility rather than the more abstract role of accessibility in society, participants provided useful information on organizational approaches to accessibility. When asked about accessibility outcomes, rather than the more abstract outcomes related to inclusion, participants provided useful information on organizational responses to accessibility demands. As before, I amended the interview guide to focus more specifically on lived experiences with accessibility.

Third, participants frequently diverged from the interview questions to discuss other topics. Participants typically provided detailed accounts of personal experiences with accessibility outcomes; the impact of standards on organizational activities, goals and resources; the resources necessary for improving web accessibility outcomes; and the lessons learned from national experiences. I again amended the interview guide to include questions that addressed those topics.

After pilot testing and revising the interview guide according to the initial results of the interviews, I further focused the interview guide on the following areas:

- The role of ICT Accessibility in the public and private sectors;
- The relationships among policy actors;
- The role of technology innovation in practice;
- The barriers and incentives to web accessibility;
- The role of standards in web accessibility;
- The resources needed to achieve broader and higher levels of web accessibility; and,
- The lessons learned from national experiences.

In addition, based on the participant's responses, I investigated topics related to the relations among national and supranational policy actors (e.g., within the EU and UN), the role of audit and certification and the use of litigation to enforce compliance. If the participant requested, I provided an overview of the interview guide prior to the interview. The overview presented the interview process and described in general the research questions.

Upon reflection, the quality of the interviews provided an excellent source of data for analysing the factors that mediate web accessibility policy implementation. All participants attended the scheduled

interviews, and the majority of the participants provided elaborate accounts of the history of web accessibility in their country, the relationships and policy processes that have occurred in international forums and their personal experiences with web accessibility as advocates, practitioners and policymakers. The only and few exceptions were participants whose backgrounds were only to a limited extent connected with web accessibility.

While some participants approached the topic of web accessibility with scepticism and criticized other actor's rhetoric or silence, other participants waxed philosophically about the ambitious aims and popular appeal of the principles that underscore web accessibility. Still others maintained an air of impartiality and responded with neither judgment nor enthusiasm. The participants that provided the richest sources of information were those that had decades of experience working in business and civil society. While participants from the public sector were, at times, forthcoming and candid in expressing their views, many tended towards restraint. However, this depended on the sensitivity of the topic. When discussing government programs or priorities, these participants talked at length. However, when discussing opposing views or opinions, these participants sometimes dismissed or evaded the question. It was only when participants were assured and re-assured of their anonymity that they provided the most detailed responses. This was especially the case for one participant who requested not to have their interview recorded.

While most interviews were held uninterrupted, a small subset of the interviews were conducted in public settings and noises from other conversations, equipment such as coffee machines, or passing vehicles occasionally disturbed the interviews. These disturbances also had an effect on the quality of the interview recording; however none of the recordings were unusable. In addition, two recording devices were used to mitigate any potential equipment failure and to provide an alternative source of audio in the event that the audio from one of the recording devices was unusable.

3.4 The Analyses

To promote accuracy and comprehensiveness, this dissertation combines different approaches to analysing the data. The analyses combine processes of induction and deduction (Miles & Huberman, 1994). I used an inductive approach by immersing myself in the data in an attempt to identify themes, and I used a deductive approach by establishing an analytic framework and using the data to assess the utility of the framework for explaining implementation processes. In conducting the analyses, I cycled between induction and deduction in a recurring process. In addition, I integrated data collection and analysis in an on-going iterative process that used prior analyses to develop further data collection techniques (McKaughan, 2008).

I used different forms of thematic analysis to examine data from the policy documents, interview transcripts and field memos (Coffey, Atkinson, & Omarzu, 1997; George & Bennett, 2005; Miles & Huberman, 1994). I used "coding" to identify consistent themes across the different data sources (Denzin & Lincoln, 1994; Miles & Huberman, 1994; Weiss, 1994). Coding requires researchers to immerse themselves in the texts by reading, re-reading and identifying text segments that relate to specific concepts (Berg, 2001; Coffey et al., 1997; Creswell, 2007; Denzin & Lincoln, 1994; Miles & Huberman, 1994). I labelled or coded the text segments and categorized the codes according to the theoretical framework described in Section 2 and the relevant concepts that emerged from the coding process. I coded by importing a sample of the interview audio recordings, transcriptions, policy documents and field memos to Nvivo, a qualitative data analysis software program (Creswell, 2007). After I compiled the text data, the software provided the functionality to code text segments, and I organized codes according to the relationships between concepts. The coding process provided a basis for further data collection and analysis.

While Nvivo provided a useful tool for conducting an in-depth thematic analysis of the data, the software did not provide the flexibility and functionality for conducting recursive abstraction.

Recursive abstraction involves summarizing data based on an established analytical framework or empirical analysis. Nvivo provides a set of features that allows users to conduct a range of qualitative analyses. However, the functionality did not support the effective and efficient use of recursive abstraction. I used recursive abstraction to analyse policy documents, interview transcriptions and field notes based on the thematic analyses of the sample interviews. I produced summaries for 36 interviews, which totalled over 8,000 words. The thematic analysis provided information and quotations regarding web accessibility policies and the roles of policy actors.

I used content analysis to examine the competing interests among policy actors. Content analysis provides a range of techniques for analysing text-based data, and acts as a particularly useful approach for examining the interests of different groups of policy actors expressed in formal and informal communications (Creswell, 2007). The content analysis focused on the conflicts among policy actors, and I used the interests of policy actors to examine the historical and social context for policy actions and social problems. The content analysis provided a useful approach for examining the aims and strategies of different policy actors involved in web accessibility and determining whether the interests of policy actors provided a basis for cooperation or conflict. I used the content analysis to examine the legal, commercial and social interests of different policy actors.

Finally, I used process tracing to analyse the historical connections between events. This dissertation conceives of process tracing as an analytical approach that traces causal relationships between two conditions in an effort to eliminate potentially intervening explanations. Bennett and Elman (2006) argue that the historical connections among events provide a basis for examining the potential causal effects of policy implementation, and process tracing provides a useful approach for examining complex causal mechanisms. This dissertation conceives of causal mechanisms as a series of events that provide an explanation for a phenomena (Checkel, 2006). According to Hedstrom and Ylikoski (2010, p. 53) “mechanism-based explanation describes the causal process selectively ... does not aim at an exhaustive account of all details but seeks to capture the crucial elements of the process”.

Process tracing typically uses theory to connect events and outcomes and demonstrates those connections using historical narratives. I use process tracing to examine the historical antecedents that led to a particular web accessibility policy design or implementation outcome. Process tracing has provided a basis for examining the historical predecessors that have influenced the development of web accessibility technologically, socially and politically. The theoretical framework presented in Section 2 guided the process tracing analysis.

Process tracing provided a useful approach for analysing the data. Process tracing produced a more comprehensive analysis by providing the opportunity to identify significant historical events or changes and examine the presence or absence of policy actors involved in web accessibility. In addition, process tracing provided an opportunity to verify the implicit and explicit assertions of interview participants. Process tracing also provided an opportunity to examine theories and models posed in previous research and thus, presented an opportunity for confirming and extending those theories and models.

3.5 Brief Discussion of Validity and Reliability in this Dissertation

While validity and reliability have been historically associated with a quantitative approach to conducting experiments in the natural sciences, research has investigated whether and to what extent validity and reliability as constructs may be useful in qualitative research (Creswell & Miller, 2000; Golafshani, 2003; Kirk & Miller, 1986). According to some scholars, validity has no bearing in qualitative research (Stenbacka, 2001). Others have argued that reliability may be a sufficient means for achieving validity in qualitative research (Golafshani, 2003). Still others insist that validity and reliability can be attained in qualitative research by using strategies for quality assurance (Kyburz-

Graber, 2004; Morse, Barrett, Mayan, Olson, & Spiers, 2002). Quality assurance strategies typically rely on measures to ensure trustworthiness in data collection methods and analysis (Creswell & Miller, 2000; Golafshani, 2003; Morse et al., 2002). According to Kyburz-Graber (2004) quality assurance for case study research includes 1) describing a theoretical basis and research questions; 2) triangulating using multiple sources of evidence (data collection and interpretation); 3) creating a chain of evidence designed for traceable reasons and arguments; 4) fully documenting case-study research; and 5) reporting the case-study through an iterative review and rewriting process.

This dissertation adheres to these quality criteria by 1) utilizing a robust theoretical framework (Figure 1) that draws upon models of policy implementation and social regulation from different disciplinary and theoretical perspectives and relates to the research questions and relevant gaps in the literature (see Sections 1.4 and 1.5); 2) triangulating multiple data sources (see Section 3.3) to corroborate the conclusions (see Papers and Section 6); 3) ensuring data analysis provides transparent and logical reasoning and argumentation (see Section 3.4); 4) documenting all data collection procedures and analysis through the use of field memos and other forms of documentation (see Section 3.3); and 5) using a reflexive process that required an iterative approach to data collection, analysis through recursive abstraction (see Section 3.4) and writing the empirical Papers (I to VI) and dissertation.

Given my 10 years' experience in the field of web accessibility and universal design of ICT, my professional experience as a web developer, an academic with multiple disabilities, and a disability rights advocate has afforded me with privileges and exposed me to some challenges in conducting the research for this dissertation. Professionally, my experience in web development provided a useful foundation for considering my own biases as well as the organizational barriers that sometimes limit or prevent web developers from substantively engaging with accessibility as a priority in web development. My technical expertise also afforded me the opportunity to navigate between the highly technical and the more social aspects of web accessibility that emerged during the data collection. However, not having a strictly academic professional background and due to the interdisciplinary nature of my formal education, I experienced challenges conducting the research, owing in part to gaps in my knowledge of classical social science theory and epistemology. Nonetheless, my interdisciplinary background and inter-sectoral professional experience did provide a useful basis for approaching web accessibility using, so-called, lateral thinking – i.e., using creative and indirect problem-solving approaches to view web accessibility from new and different perspectives.

My experience as an academic with a disability has not differed substantively from the barriers and experiences that have been documented in the literature (Barnes, 1996; Kitchin, 2000; J. Williams & Mavin, 2015). However, as I acquired my disabilities during the course of the research for this dissertation, it gave me the opportunity to reflect on the meaning of disability in my own life and the systemic barriers, prejudices, and biases that pervade academia, in particular as they relate to psychosocial disabilities such as depression and anxiety. While I could have used my disabilities as a basis for establishing rapport with the research participants, I chose not to reveal my disability during the course of the research due to personal preference. Finally, as a disability rights advocate, I have been directly involved in putting ICT accessibility policies into practice nationally and internationally. While the role of the action researcher is well-acknowledged in the literature, my work promoting disability rights has focused on translating research into practice and applying universal design to political priorities outside of ICT and disability law and policy (McIntyre, 2007; Whyte, 1991). While I acknowledge that this may have influenced the very phenomena I set out to investigate, the privilege of my position afforded me the opportunity to observe and participate in policy design and implementation settings that may have not been made available to persons outside of the disability rights community.

4. Ethical Considerations

The data collection used in this dissertation complies with Section 31 of the Norwegian Personal Data Act and adheres to the norms and principles of ethical practice in research (Norwegian National Research Ethics Committees, 2016). The Norwegian Social Science Data Services approved data collection in August 2012 (Project 30593, see Appendix C). The principles of ethical research include obtaining informed consent from interview participants. I obtained informed consent from interview participants first in writing through email and again verbally prior to beginning the interview. I informed participants of the study protocol and data retention and anonymity procedures. I attempted to minimize any potential emotional harm by phrasing the interview guide and questions to focus on the objective experiences of the participants with web accessibility. I ensured that the results accurately represented the data by confirming the inferences made from the data with the participants. While the participants were not compensated, participants were informed that one benefit of their participation is the opportunity to contribute to the greater understanding of the issues faced by the policymakers with regard to web accessibility. The participants were also informed that there would be minimal risk, they can refuse to answer any questions and are free to stop the interview or withdraw from the study at any time. The participants provided consent to participate in the study as a means for benefiting society at large and in particular the stakeholders in the field.

I retained all records associated with the interview including audio and text transcripts electronically on encrypted and password-protected media. I anonymized interviews by replacing identifiable information with randomly assigned four-digit identification (ID) numbers and I retained the key in a password-protected spreadsheet for identifying the participants for potential future follow-up. After data collection was completed in 2015, I removed all personally identifiable information from the interview transcripts and other documentation. I encrypted, password protected and anonymized the interview data, including transcripts and recordings, to protect participants from indirect identification – i.e., the identification of an individual through a combination of identifiers such as date of birth, residence and other unique or personal characteristics. In addition, while conflicts between actors were discussed, specific conflicts between specific persons or organizations were not directly referenced. Instead, the interviews approached conflict indirectly – e.g., by asking whether others shared the participant's views. This approach was used to illuminate any conflicts that may not have emerged in the interview while at the same time attempting not to aggravate the participants.

In my work with this dissertation, I have attempted to ensure reciprocity between the help and assistance provided by the interviewees and what I gave back to the stakeholders working with web accessibility by communicating and disseminating the research results in a variety of specialist and non-specialist forums to raise awareness about web accessibility and promote more effective implementation of web accessibility and related policies. In addition to the six papers, which form the basis of the empirical research in this dissertation, the results were additionally communicated in 72 public and private events including seminars, conferences, podcasts, workshops, colloquia, guest lectures and presentations. In addition, social media was used to disseminate the results of the dissertation including through social networking platforms such as Facebook, Twitter, YouTube, and Reddit and the websites of Oslo Metropolitan University and other organizations. The results of the research have additionally been presented at the UN International Telecommunications Union (ITU), World Health Organization (WHO), Educational, Scientific and Cultural Organization (UNESCO), and Development Program (UNDP) in several expert consultancy meetings held in collaboration with key stakeholders from the public and private sectors.

5. Dissertation Storyline

This dissertation starts with the question of how are web accessibility policies designed and implemented. In order to answer this question, I came to focus on four themes evident in web accessibility policy and practice, which include using standards to promote web accessibility (papers I and II), harmonizing web accessibility policy (papers III and IV), and promoting web accessibility in practice (papers V and VI). In this Section, I will provide a brief summary of the six empirical papers – written as journal articles – describe how these themes are observable and discuss the meaning of those themes for research on policy design and implementation.

5.1 Paper I: Regulating Web Content

Paper I originates from the observation that though governments delegate the responsibility for implementing web accessibility law and policy to regulatory agencies, in the UK and Norway, regulatory agencies have mainly focused on the use of standards to promote web accessibility. This paper explores how regulatory agencies influence the legal obligations that result from the adoption of a standard in law or policy. In this paper, I understand law and policy as forms of social regulation used to promote web accessibility.

The results of this paper provide a useful basis for clarifying the role of institutions in policy design as conceptualized in Figure 1. Based on an analysis of semi-structured interviews with web accessibility experts, I argue that regulatory agencies chose to refer to standards in law or in persuasive policies based largely on national policy traditions. This paper shows how national policy traditions influence the legal obligations of performance standards for web accessibility.

The paper concludes that national policy traditions structure a regulator's approach to the use of voluntary or mandatory standards in web accessibility policies. Specifically, policy traditions in the UK and Norway have influenced the legal obligations of web accessibility standards by constraining the policy options available to regulatory agencies. Legislators in the UK and Norway determined the authority and capacity of regulatory agencies and have indirectly influenced the legal obligations of web accessibility standards. In turn, regulatory agencies influenced the development and use of standards, both voluntary, in the case of the UK, and statutory, in the case of Norway. The paper suggests that differing legal traditions may provide a potential explanation for the differences observed between the UK and Norway.

5.2 Paper II: Self-Regulation and the legitimacy of voluntary procedural standards

Paper II originates from the observation that policy actors involved in web accessibility in the UK focus mainly on the design and implementation of voluntary standards. In this paper, I examine voluntary standards as a form of social regulation and explore how policy traditions relate to participation in standardization, the legalization of standards and the incentives for private enterprises to adopt a standard in practice.

The results of this paper provide a useful basis for clarifying the role of public and private sector actors in policy design and implementation as conceptualized in Figure 1. Based on the analysis of semi-structured interviews with web accessibility experts and their experiences in designing web accessibility standards, I argue that this focus on voluntary standards ignores the vital question of what voluntary means and how voluntariness is influenced by policy traditions. This paper shows how standardization can support a self-regulatory approach to promoting web accessibility where: 1)

regulators are supported by a robust regulatory regime, 2) market actors are engaged in the standardization process, and 3) the quality of the standard reflects ethical and legal norms.

This paper concludes that standards can support a voluntary approach to achieving web accessibility by promoting ethical and legal considerations in the standardization process. While market actors have had limited involvement in web accessibility standardization in the UK, standards organizations have attempted to encourage market actors to self-regulate by promoting the non-market and non-technical benefits of the standard.

5.3 Paper III: Transatlantic Learning

The purpose of paper III is to shed light on how ideas and values on policy design in the US have influenced web accessibility policy in Europe, and hence provide insight into the mechanisms around policy learning. In this paper, I understand policy learning as the process of integrating international ideas or ideas from abroad in domestic policies. I have investigated the research question, which seeks to examine the extent that principles in US disability antidiscrimination have influenced disability law and policy in Europe, using qualitative data drawn from policies, reports and other documentary evidence.

The results of this paper provide a useful basis for clarifying the role of policy diffusion as conceptualized in Figure 1. The results show that principles embedded in US disability antidiscrimination law and policy have influenced disability law and policy in Europe. This form of policy learning, is evident in European regulatory reforms that aimed to protect persons with disabilities from discrimination. However, despite drawing inspiration from the US, this paper argues that a distinctive European approach can be identified. This European approach combines a universal, human rights perspective, with implementation procedures that emphasize standardization and involve networks of policy actors.

The paper concludes that policy traditions in Europe provide an opportunity to inform future efforts in the US. In particular, the approaches used in Europe that emphasize the use of ICT accessibility standards and that involve public and private sector actors in standardization can provide a useful mechanism for harmonizing web accessibility standards in the US and Europe.

5.4 Paper IV: Transnational convergence of public procurement policy

Public procurement policies aim to promote web accessibility by requiring government agencies to purchase technology that is accessible for persons with disabilities. In this specific context, public procurement policies are understood as a form of web accessibility policy where standards prescribe specific features or functions of technology. In paper IV, I describe the processes where web accessibility standards become part of public procurement policies in the US and Europe.

The results of this paper provide a useful basis for clarifying the role of policy learning and convergence as conceptualized in Figure 1. Semi-structured interviews with subject matter experts, national and international standards organizations, interest organizations, private enterprises, and government agencies showed that private sector web accessibility standards diffused to public procurement policies in the US and Europe through an international policy network. The policy network involved actors from public, private and voluntary sectors. This paper demonstrates that the policy network involved in designing public procurement policies in the US and Europe contributed to the harmonization of ICT accessibility standards between the US and Europe.

The paper concludes that an international policy network of web accessibility professionals contributed to the diffusion of WCAG and the convergence of ICT accessibility standards for public procurement.

5.5 Paper V: Regulatory Intermediaries

The adoption of web accessibility standards in practice is considered one mechanism for ensuring access to the web for persons with disabilities. Web accessibility is often understood in a technical way. In paper V, I start from a different perspective and approach web accessibility as an issue of interpretation. This paper explores views on web accessibility as an issue of human rights, social inclusion and usability and what these views contribute to our understanding of web accessibility in practice.

The results of this paper provide a useful basis for clarifying the roles of public and private sector actors as conceptualized in Figure 1. Interview data from the US and the UK shows that interest organizations act as intermediaries and adopt a combination of adversarial and persuasive approaches to promoting compliance. Interview data from Norway provide a useful counterpoint to the US and UK. Interest organizations in Norway have so far relied on persuasive strategies to promote compliance with web accessibility policies. While interest organizations in all three cases act as intermediaries, strategies for ensuring compliance differ.

This paper concludes that interest organizations translated and adjusted web accessibility policies to complement and reflect the commercial priorities of private enterprises. Interest organizations act as intermediaries to manage the incongruence that exists between policy objectives and practice. This paper further concludes that interest organizations translated web accessibility policies by emphasizing human rights, social inclusion and usability, and adjusted web accessibility policies by adopting principles of universal design.

5.6 Paper VI: Auditing Web accessibility

Already present in the former papers is the assumption that web accessibility standards should focus on actionable results that can be measured and certified. This explicit attention to certification is relatively new, since research on web accessibility typically focuses on the interpretation of antidiscrimination legislation or the design of the web. In paper VI, I explore what the paradigm shift towards certification means in practice for web accessibility advocates. To what extent did the shift from web accessibility as a testable outcome to web accessibility as a profession lead to new forms of certification that facilitate compliance with web accessibility policies? I do this by mobilizing the concept of audit as developed by M. Power (1997) in his book *“The Audit Society: rituals of verification”*.

The results of this paper provide a useful basis for clarifying the role of social regulation as conceptualized in Figure 1. Interviews with web accessibility practitioners in the UK and US show how auditing and certification can support compliance. Interest organizations have used performance certification and professional certification to ensure web accessibility.

This paper concludes that audit and certification initiatives for web accessibility emerged in the UK and US from interest organizations. Voluntary certification initiatives can support compliance by ensuring web accessibility in practice, embedding accessibility competencies in an enterprise through professional certification and integrating accessibility throughout an enterprise through procedural certification.

6. Discussion

In this Section, I return to the question of how web accessibility policies are designed and implemented. I sum up what the overall empirical analysis, represented in papers I to VI, may contribute to our understanding of policy design and implementation.

In Section 1, I provided an overview of research on web accessibility and demonstrated the relevance of research on social regulation for examining the design and implementation of web accessibility policies. The review of research on social regulation identified three gaps that this dissertation filled. I argued that research on implementing social regulation has yet to explain fully the *role of non-State actors* in policy design and implementation. I then argued that research has yet to examine fully the *interaction between State and non-State actors* and the norms, values and procedures involved in policy design and implementation. Finally, I argued that research has yet to explain fully the role of non-State actors in *promoting compliance*. Based on the three gaps in the literature, I posited one overarching research question and three sub-questions that have guided the empirical research captured in papers I to VI.

To frame the answer to these questions, I presented a model for policy design and implementation, showed in Figure 1, which has been developed as a result of the empirical analyses. Figure 1 brought together four analytic concepts including, institutions, policy design and diffusion, policy implementation and outcomes. Altogether, I used these analytic concepts as a framework for answering the overarching research question and three sub-questions. This Section first details the answers to these questions and uses these answers to re-inform the relationships among the analytic concepts modelled in Figure 1. This Section finishes by detailing the specific contributions that the empirical analyses, captured in Papers I to VI, have for research on the design and implementation of social regulations.

6.1 Responses to the Research Questions

Table 5 provides a summary of the research questions and findings.

Table 5: Summary of research questions and responses.

Research Question	Response
Overarching research question: How do social institutions affect the design and implementation of web accessibility policies?	Social institutions have affected the design and implementation of web accessibility policies by 1). Structuring the participation of policy actors in standardization, 2). Constraining the decision-making processes in standardization.
Sub-question 1: How and to what extent have relevant social institutions changed over time?	Social institutions have changed over time as 1). Opportunities and incentives have emerged for non-State actors to participate in standardization, 2). Opportunities and incentives have emerged for non-State actors to participate in policy implementation.
Sub-question 2: How has the institutional setting influenced the design and implementation of web accessibility policies?	The institutional setting has influenced the design and implementation of web accessibility policies by 1). Constraining the policy options available to regulatory agencies, 2). Structuring the implementation of web accessibility policies in practice.
Sub-question 3: How have policy actors implemented legal obligations in practice?	Policy actors have supported the implementation of web accessibility policies in practice by 1). Emphasizing human rights, social inclusion and usability, 2). Promoting compliance using audit and certification initiatives.

6.1.1 How do Social Institutions Affect the Design and Implementation of Web Accessibility Policies?

Figure 1 suggests that institutions may influence policy design and implementation. The overarching research question posed in this dissertation asked, “How do social institutions affect the design and implementation of web accessibility policies?” This question aims to clarify the relationship between social institutions and the design and implementation of web accessibility policies as illustrated in Figure 1. Based on the analyses in papers II, III and IV, social institutions structure the design and implementation of web accessibility policies by empowering and constraining the choices of policy actors involved in web accessibility. Research has argued that institutions act to constrain and guide policy actors (March & Olsen, 2006; Peters, 1998). The analyses presented in papers II, III and IV demonstrated that the social institutions involved in the design and implementation of web accessibility policies in the UK, Norway, the US and EU structured the participation of policy actors and constrained decision-making processes in standardization.

Structuring the Participation of Policy Actors in Standardization

First, in papers II, III and IV, I have argued that the social institutions involved in standardization structured the participation of policy actors in designing standards. As papers II, III and IV suggested, social institutions have structured the participation of policy actors in standardization in the UK, at the British Standards Institution (BSI) and in Europe, at the ESO.

Paper II argued that social institutions enabled interest organizations to participate and limited the participation of market followers in standardization at the BSI. Paper III argued that a distinctive

European approach has influenced ICT accessibility policy implementation. This approach has emphasized the involvement of policy networks in standardization. Paper IV argued that social institutions enabled market leaders to participate in the design and diffusion of WCAG to ICT accessibility standards for public procurement in the US and Europe. Data from Paper IV also suggests that social institutions limited the participation of interest organizations in the design and diffusion of WCAG.

Based on the analyses in papers II, III and IV, I have argued that social institutions structure the participation of policy actors in standardization by both enabling and limiting participation. I have also argued that participation by interest organizations in standardization is contingent on establishing procedures that require and support their participation. In addition, I have argued that policy traditions have enabled networks of policy actors to participate in standardization. Finally, I have argued that participation by market followers is contingent on financial support to ensure their participation.

Constraining Decision-making Processes in Standardization

Second, in papers II and IV, I have argued that the social institutions involved in standardization constrained decision-making processes in policy design. As papers II and IV suggested, social institutions have structured the decision-making processes involved in standardization at the BSI, the W3C, US Access Board and ESO.

Paper IV argued that a combination of procedures for inclusive participation, consensus and transparency, contributed to the convergence of ICT accessibility standards for public procurement. Paper II argued that consensus procedures structure the design of standards. Paper II also argued that procedures, which promote efficiency (i.e., by limiting participation) over consensus act as constraints for achieving the popular acceptance of a standard by either regulatory agencies or service providers.

Based on the analyses in papers II and IV, I have argued that while consensus procedures structure decision-making processes, the adoption of a standard is contingent on procedures that promote inclusion. I have also argued that, in combination, procedures for consensus and inclusion can promote the adoption of standards both in practice by service providers and in law by regulators.

6.1.2 How and To What Extent Have Relevant Social Institutions Changed Over Time?

Figure 1 suggests that outcomes may influence institutions and policy design and diffusion. The first sub-question posed in this dissertation asked, “How and to what extent have relevant social institutions changed over time?” This question aims to clarify the relationship between web accessibility outcomes, institutions, and policy design and diffusion as illustrated in Figure 1. Based on the analyses in papers II, III, IV, V and VI, social institutions have changed in response to the opportunities and motivations to participate in policy design. Research has argued that despite the character of institutions to structure and constrain, social institutions have changed in response to the ideas and values of policy actors (Hall, 1993). The analyses presented in papers II, III, IV, V and VI demonstrated that social institutions have changed over time as opportunities and incentives have emerged for non-State actors to participate in standardization and to promote policy implementation and compliance.

Providing Opportunities and Incentives for Non-State Actors to Participate in Standardization.

First, in papers II and IV, I have argued that social institutions have changed over time as opportunities and incentives have emerged for non-State actors to participate in standardization. As

papers II and IV suggested, opportunities and incentives have emerged for non-State actors to participate in designing web and ICT accessibility standards. Paper IV argued that the US government initiated standardization at the W3C, and interest organizations and market leaders cooperated in the design of WCAG. In addition, paper IV argued that the US government initiated standardization at the US Access Board, and interest organizations and market leaders indirectly contributed to the design of the Section 508 standards. Finally, paper IV argued that the EU initiated standardization at the ESO, and market leaders contributed to the design of the M 376 standards. Paper II argued that regulatory agencies in the UK initiated standardization at the BSI and interest organizations and market leaders cooperated in the design of British Standard (BS) 8878 – the UK’s web accessibility process standard.

Based on the analyses in papers II and IV, I have argued that while opportunities and incentives typically exist for market leaders to participate in standardization directly or indirectly, fewer opportunities and incentives exist for interest organizations to participate in standardization and little to no opportunities and incentives exist for market followers to participate in standardization. I have also argued that market leaders participated in standardization due to the opportunities and incentives for market leaders to capitalize on prior investments. Finally, I have argued that interest organizations and market followers participate to a lesser extent in standardization due in part to a lack of financial resources and in part to a lack of procedures that ensure their participation.

Providing Opportunities and Incentives for Non-State Actors to Promote Policy Implementation and Compliance.

Second, in papers III, V and VI, I have argued that social institutions have changed over time as opportunities and incentives have emerged for non-State actors to promote policy implementation and compliance. As papers III, V and VI suggested, opportunities and incentives have emerged for interest organizations to act as intermediaries between private enterprises and regulators by promoting policy implementation and compliance. Paper III argued that formalized networks of non-State actors in the EU, including consumer rights organizations, trade organizations, professional organizations, research and higher education institutions, enterprises and advocacy organizations, have promoted the adoption of European standards for ICT accessibility. Paper V argued that interest organizations responded to commercial opportunities and cooperated with enterprises by using a persuasive approach (e.g., in Norway) to promoting compliance or by using a combination of adversarial and persuasive approaches (e.g., in the UK and US) to promoting compliance with web accessibility policies. Paper VI argued that interest organizations in the UK and US have offered audit and certification as a commercial service to private enterprises. Paper VI also argued that interest organizations in the UK and US have offered both performance certification and professional certification.

Based on the analyses in papers III, V and VI, I have argued that the opportunities and incentives for interest organizations to promote the implementation of and compliance with web accessibility policies differ in Norway, the UK, the US and EU. I have also argued that while interest organizations have adopted both adversarial and persuasive approaches to promoting the implementation of and compliance with web accessibility policies in the UK and US, interest organizations in Norway have relied to a greater extent on persuasive approaches. The EU provides a further dimension to the analysis and shows that the EU’s approach to integrating policy networks as a form of governance has provided an opportunity for non-State actors to formally organize and promote ICT accessibility. Finally, I have argued that while interest organizations in the UK and US have introduced audit certification initiatives to promote compliance with web accessibility policies, interest organizations in Norway have yet to introduce audit or certification as a means for promoting compliance.

6.1.3 How Has the Institutional Setting Influenced the Design and Implementation of Web Accessibility Policies?

Figure 1 suggests that the institutional setting may influence policy design and implementation. The second sub-question in this dissertation asked, “How has the institutional setting influenced the design and implementation of web accessibility policies?” This question aims to clarify the relationship between the institutional setting and the design and implementation of web accessibility policies as illustrated in Figure 1. This question differs from the overarching research question as the second sub-question focuses on how the context – i.e., historical and environmental mechanisms – has structured and constrained the design and implementation of web accessibility policies. Research has argued that over time, different historical and environmental conditions have structured and constrained policy design and implementation (Campbell, 1998; Sanders, 2006; Steinmo et al., 1992). The analyses presented in papers I, III and V demonstrated that social institutions structured the implementation of web accessibility policies in practice and constrained the policy options available to regulatory agencies.

Constraining the Policy Options Available to State Actors.

First, in papers I and III, I have argued that the institutional setting constrained the design of web accessibility policies by limiting the options available to State actors. As paper I suggested, national policy traditions constrained the policy options available for regulating web accessibility. Paper I argued that in the UK, the regulatory authority and capacity of the Equality and Human Rights Commission (EHRC) and the design and implementation of the Equality Act 2010 structured the legal status of BS 8878. Paper I also argued that the regulatory authority and capacity of the Equality and Antidiscrimination Ombud (LDO) and other Norwegian regulatory agencies and the design and implementation of the Antidiscrimination Accessibility Act structured the design of the regulations for universal design of ICT, which legally obligate service providers to comply with WCAG. As paper III suggested networks of non-State actors have worked alongside EU institutions to coordinate the design and implementation of ICT accessibility policies. However, despite evidence of policy learning from the US, policy traditions in the EU have structured the approaches to promoting ICT accessibility by emphasizing human rights and universal design through the implementation of standards.

Based on the analyses in papers I and III, I have argued that policy traditions constrain the policy options available to State actors. Specifically, I have argued that distinct national and European policy traditions have constrained the policy options available to State actors in the UK, Norway and the EU. In the UK and Norway policy traditions structured the legal status of web accessibility standards and in the EU, policy traditions structured the policy instruments used to promote ICT accessibility. Finally, I have argued that institutional theory provides a useful basis for explaining the differences in the use of standards as a means for clarifying ambiguity in social regulations.

Structuring the Implementation of Web Accessibility Policies in Practice.

Second, in paper V, I have argued that the institutional setting structured the implementation of web accessibility policies in practice. As paper V suggested, the institutional setting of private enterprises in the UK, Norway and the US structured the implementation of web accessibility policies. Paper V argued that interest organizations translated and adjusted web accessibility policies to complement and reflect the commercial priorities of private enterprises. Paper V also argued that interest organizations used universal design principles to reframe web accessibility as an opportunity to expand market share, extend usability to all users, and extend inclusion to older persons.

Based on the analyses in paper V, I have argued that the social institutions of private enterprises structured the implementation of web accessibility policies in practice. I have also argued that despite differences between policy approaches in the UK, Norway, and the US, interest organizations in all three countries attempted to support the implementation of web accessibility policies by appealing to

private enterprises' commercial interests. Finally, I have argued that while policy approaches may differ among countries, theories on social regulation may provide a useful explanation for why interest organizations in the UK, Norway and the US have all adopted similar approaches to supporting the implementation of web accessibility policies.

6.1.4 How Have Policy Actors Implemented Legal Obligations in Practice?

Figure 1 suggests that networks of public and private sector actors may influence policy implementation and outcomes. The third sub-question in this dissertation asked, "How have policy actors implemented legal obligations in practice?" This question aims to clarify the interdependent roles of policy actors in implementing web accessibility policies and ensuring social outcomes as illustrated in Figure 1. Based on the analyses in papers V and VI, interest organizations have supported web accessibility policy implementation. Research has argued that non-State actors support policy implementation and promote compliance through a variety of different approaches and interventions (Ayres & Braithwaite, 1992; Levi-Faur, 2011; Merry, 2006). The analyses in papers V and VI demonstrated that interest organizations have supported implementation by emphasizing the social norms, values and procedures of web accessibility and promoted compliance by using audit and certification initiatives.

Supporting Implementation by Emphasizing the Social Norms, Values and Procedures of Web Accessibility.

In paper V, I have argued that interest organizations provide support for implementing web accessibility policies by emphasizing the social norms, values and procedures that complement policy goals and appeal to market actors. Paper V suggested that interest organizations in the UK, Norway and the US have translated web accessibility policies by emphasizing human rights, social inclusion and usability. Paper V argued that interest organizations translated web accessibility policies by emphasizing human rights principles and appealing to an enterprise's moral or ethical values. Paper V also argued that interest organizations translated web accessibility policies by emphasizing opportunities for participation and social inclusion and appealed to an enterprise's social responsibilities. Finally, paper V argued that interest organizations translated web accessibility policies by emphasizing web content usability and appealed to an enterprise's commercial interests.

Based on the analysis in paper V, I have argued that interest organizations influenced the implementation of web accessibility policies by emphasizing different social norms, values and procedures. I have also argued that the approach to ensuring web accessibility in the UK and US differs from Norway. According to my analyses, the interdependent network of policy actors involved in web accessibility may provide a useful explanation for why interest organizations in the UK, Norway and the US have all adopted similar approaches to supporting the implementation of web accessibility policies while still retaining distinctly national approaches to promoting and ensuring web accessibility in practice.

Promoting Compliance Using Audit and Certification Initiatives.

In paper VI I have argued that interest organizations have supported the implementation of legal obligations for web accessibility by introducing audit and certification initiatives to promote compliance. Paper VI argued that interest organizations in the UK and US have used performance certification to establish accessible web content and remove barriers to the web for persons with disabilities. Paper VI also argued that interest organizations in the UK and US have used professional certification to embed accessibility competencies within an organization and ensure an individual's accessibility knowledge and experience.

Based on the analysis in paper VI, I have argued that interest organizations influenced the implementation of legal obligations for web accessibility by introducing audit and certification initiatives. I have also argued that these certification initiatives aimed to remove barriers to the web for persons with disabilities and ensure an individual's web accessibility knowledge and experience. Finally, I have argued that theories of social regulation including theories of regulatory enforcement and models of voluntary regulation provide a useful explanation for why interest organizations in the UK and US have introduced similar approaches to audit and certification. In particular models of voluntary regulation provide a potential causal explanation for the similarities observed between the UK and US. Essentially, in the absence of clearly defined compliance criteria issued by the UK or US governments, interest organizations have worked with private enterprises to evaluate web accessibility outcomes and put voluntary international web accessibility standards into practice through the use of audit and certification initiatives.

6.2 Contribution to the Literature on Web Accessibility

In Section 1.4, this dissertation identified two gaps in the literature on web accessibility. First, research has yet to examine fully the design and implementation of web accessibility policies. Research has focused on the legal interpretations of law and policy and the technical and organizational outcomes associated with web accessibility. However, research had yet to fully examine the mediating factors that influence the design of web accessibility law and policy and the implementation of those laws and policies in practice. Second, research had yet to fully examine web accessibility comparatively.

6.2.1 Contribution to Research on Web Accessibility Policy Design and Implementation

The results of this dissertation illustrated three key factors that mediate the design and implementation of web accessibility policy. First, papers I, II, and III showed the influence of social institutions on web accessibility policy. In paper I, the analysis showed that social institutions in the form of policy traditions have contributed to divergent policy outcomes in the UK and Norway. In paper II, the analysis showed that in the UK, social institutions have shaped the participation of policy actors in the design of web accessibility standards. In paper III, the analysis showed that despite the influence of US law and policy internationally, a distinct European approach to web accessibility has emerged due in part to social institutions for human rights, universal design and standardization.

Second, papers IV and V showed the influence of policy networks on the design and implementation of web accessibility standards. In paper IV, the analysis showed that a transnational network of State and non-State actors have contributed to the design of ICT accessibility standards for public procurement in the US and EU. The analysis additionally provided evidence of convergence between the US and EU orchestrated in large part by an international standards organization – the W3C. In paper V, the analysis showed that networks of national non-State actors have influenced the implementation of web accessibility law and policy. The analysis showed that interest organizations have acted as intermediaries between the State and private enterprises by collaborating with private enterprises and translating the goals of web accessibility law and policy into practice.

Third, papers I, II, III, IV and VI showed the variety of social regulations used to persuade and coerce market actors to ensure web accessibility. Papers I, II, III and IV all showed that web accessibility standards have emerged as one of the principal forms of web accessibility social regulation. The analyses in papers I and II showed that web accessibility standards have emerged nationally to provide detailed criteria that support the implementation of disability antidiscrimination

legislation. The analyses in papers IV and VI showed that international web accessibility standards have emerged as a mechanism for influencing domestic web accessibility law and policy.

In sum, the papers included in this dissertation contributed new knowledge on web accessibility law and policy by moving beyond an exclusive focus on either web accessibility law and policy or outcomes and showed that social institutions, policy networks and social regulations mediate the design and implementation of web accessibility policies.

6.2.2 Contribution to Research Methods for Web Accessibility

The results of this dissertation illustrate two key contributions from the papers that have used a comparative case study design. First, papers I, V and VI show that the comparative case study design provides a useful basis for illustrating the dynamic relationship between international pressures for convergence and national policy traditions. The analysis in paper I shows that although in certain respects the similarities between web accessibility policies in the UK and Norway have grown, national policy traditions remain. These policy traditions primarily involve the relationship between standards and legislation. The analysis in paper V shows that while interest organizations have emerged to intermeditate the relationship between the State and private enterprises in the US and UK, in Norway, interest organizations have yet to fully adopt the role of regulatory intermediary. The analysis in paper VI shows that in the US and UK, where standards have remained voluntary, interest organizations have created audit and certification programs as a mechanism for ensuring that private enterprises comply with web accessibility policies.

In sum, papers I, V and VI contribute new knowledge on web accessibility law and policy by moving beyond exploratory research aimed at mapping the variety of web accessibility laws and policies and provide a useful basis for explaining the mechanisms that have contributed to national similarities and differences.

6.3 Contribution to the Literature on the Implementation of Social Regulations

In Section 1.4, this dissertation detailed two gaps in the research on policy implementation and social regulation. These gaps focus on the role of non-State actors in implementing social regulations and the long-term interactions between social institutions and the actions of policy actors involved in implementing social regulations. These gaps are considered in relation to the nexus between top-down and bottom-up approaches to policy implementation and the relationship between the design and implementation of social regulations. Table 6 provides an overview of the two gaps and the contributions that this dissertation has made to research on policy implementation and social regulation.

This dissertation does not claim to make an exhaustive account of the mechanisms behind policy implementation, nor does it claim to make indisputable conclusions about the implementation of social regulations. What it does provide is a unique account of the potential mechanisms that underscore policy implementation and a new perspective on the potential relationships among the analytic concepts outlined in Figure 1, which is based on empirical data on the implementation of web accessibility policy in the UK, Norway, and the US.

Table 6: Overview of research gap and principal contribution.

<u>Research Gap</u>	<u>Contribution</u>
Role of non-State actors in implementing social regulations	<p>Increasing responsibilities for non-State actors in designing and implementing web accessibility policies, in particular web accessibility standards</p> <p>Increasing roles as trusted intermediaries in promoting and ensuring compliance with, sometimes, ambiguous legislative policies and in conflict with private enterprises' formal goals</p>
Long-term interactions between social institutions and the actions of policy actors involved in implementing social regulations	<p>Historical contingencies and path dependencies in the form of policy traditions have given rise to national and regional differences in the adoption of web accessibility standards in legislative policies</p> <p>New cultural values and sources of cultural authority introduced in the disability rights movement have legitimized and led to the diffusion of new institutional forms and practices associated with web accessibility</p>

6.3.1 Role of Non-State Actors in Implementing Social Regulations

A top-down approach to implementing antidiscrimination legislation could provide a useful contribution to research on web accessibility by examining the significance of government actions taken by regulatory agencies and other State actors on policy outcomes for web accessibility. However, this dissertation adopts a more synthesized top-down and bottom-up approach by emphasising the responsibilities of State and non-State actors and the role of trust as a mitigating factor in social regulation. In addition, this dissertation observes the effect of ambiguity and conflict in promoting compliance with web accessibility policies. While the analyses in Papers I, II and III focus to a greater extent on a top-down approach to policy implementation, the analyses in Papers IV, V and VI have a particular focus on bottom-up approaches including the role of non-State actors in the design, implementation and enforcement of web accessibility policies.

Delegating Responsibilities to Non-State Actors

Research in social regulation shows an overall trend towards delegating responsibility for policy design and implementation to non-State actors in particular as it relates to co-regulation (Levi-Faur, 2011). Research in social regulation has characterized co-regulation as an approach to self-regulation that involves non-State actors in regulatory design and enforcement (Levi-Faur, 2011; Ogus, 1995; Pollitt, 1999; Töller, 2011). The results of this dissertation demonstrate how new responsibilities for interest organizations and private enterprises blur the lines between top-down and bottom-up approaches to implementation and transcend the boundaries between policy design and implementation.

While State actors in the UK, Norway, and US have maintained responsibility for the design of disability antidiscrimination legislation, responsibility for the application of that legislation to the web has largely been meted out by non-State actors in two areas. First, State actors have delegated responsibility for the design of web accessibility standards to international standards organizations. While State actors participated in the design of WCAG, BS 8878 and M376, the design of these standards was under the auspices of non-State actors, including the W3C, BSI and ESO respectively, and driven by non-State actors including private enterprises, interest organizations, and other

standards organizations. The role of State actors in these policy design processes focused on the alignment and adoption of web accessibility standards with existing disability antidiscrimination legislation. Therefore, on one hand, the design of web accessibility standards may be considered as an aspect of policy design – i.e., the selection of standards as a particular policy instrument, on the other, the design of web accessibility standards may be considered as an aspect of policy implementation – i.e., the application of disability antidiscrimination legislation to the web.

Second, State actors have largely ceded compliance processes to non-State actors. While State actors still largely maintain responsibility for enforcing compliance with antidiscrimination legislation, compliance with web accessibility policies in the UK, Norway, and the US has devolved to private enterprises and interest organizations. As such, while private enterprises maintain ultimate responsibility for complying with national regulations, interest organizations have emerged as co-regulators in these implementation processes. Essentially, the introduction of voluntary web accessibility standards has prompted interest organizations to intervene in compliance efforts by translating and adjusting web accessibility policies into practice. These efforts have largely taken place in cooperation with private enterprises and include mechanisms to audit and certify compliance with web accessibility standards.

Mitigating Trust in Compliance

Research shows that, from a bottom-up perspective, trust plays a salient role in implementation (Hill & Hupe, 2008, p. 60). This research shows that trust predominately revolves around the process of putting policies into practice. The results of this dissertation point to the role of trust in two areas, compliance and standardization.

First, in the UK and US, which have largely used a self-regulatory approach to web accessibility, regulatory agencies have not adopted web accessibility standards in legislative policies and in effect have entrusted non-State actors with determining the means for ensuring web accessibility in practice. As a result, interest organizations have approached compliance through both persuasive and adversarial approaches. Interest organizations have used a persuasive approach to promoting compliance by cooperating with private enterprises to apply web accessibility policies in practice. In this approach, interest organizations have used audit and certification to promote compliance with web accessibility policies. Essentially, interest organizations have used audit and certification as vehicles for promoting trust between interest organizations and private enterprises. By cooperating with interest organizations, private enterprises have to trust that audit and certification will enable them to avoid legal challenges. Conversely, interest organizations have to trust that audit and certification will help increase levels of compliance within an enterprise and reduce the risk that the enterprise will evade compliance. In the UK and US, when efforts to cooperatively ensure compliance with web accessibility policies have failed, the loss of trust between interest organizations and private enterprises have led to more adversarial approaches to promoting compliance. In these instances, interest organizations have emphasized the risk of litigation and negative public relations, and have threatened or pursued legal action.

Second, in the UK, Norway and the US, State and non-State actors have turned to standards organizations as a means for promoting cooperation and consensus among policy actors. In the UK, this has largely taken place as part of the design of BS 8878, while in the Norway, State actors have adopted web accessibility standards in regulations for web accessibility. The US has taken a more indirect approach by propagating WCAG through the W3C as well as harmonizing national public procurement legislation with WCAG. All three cases show that State actors trust standards organizations to promote cooperation and ensure consensus among relevant stakeholders. This trust in standardization as an institution relies on standards organizations' relevance for applying policy principles in practice. The role of standardization in policy implementation is a departure from the traditional role of standardization, which was born more out of the need for technical interoperability than operationalizing social regulations. As a result, as State actors in the UK, Norway and the US have relied on standards organizations for ensuring cooperation and consensus regarding the

implementation of web accessibility policies in practice, trust in standards organizations as institutions has risen among all stakeholders. This increasing trust has led to the legitimization and diffusion of web accessibility standards as a means for ensuring web accessibility in practice.

Interpreting Ambiguity and Mediating Conflict in Compliance

Research shows that ambiguity and conflict act as mediators to policy implementation (Matland, 1995). This research shows that different implementation approaches may prove more effective depending on a policy's ambiguity and conflict. The results of this dissertation show that while high levels of ambiguity in disability antidiscrimination legislation and high degrees of conflict between the formal goals of interest organizations and private enterprises have led to the design of measurable criteria for web accessibility in the form of standards and, to a limited extent, the implementation of those standards in practice.

In terms of web accessibility, the trend towards voluntary approaches to regulation is coupled with high levels of ambiguity in legislative policies. From the perspective of Matland (1995), voluntary approaches to social regulation can be viewed as a response to conflicts over the role of the State. Antidiscrimination legislation in the UK and US provided a legal basis for regulating web accessibility. However, the legislation did not provide specific compliance-related criteria for ensuring web accessibility. Thus, the ambiguity or broad scope for interpreting legislative requirements for web accessibility resulted in a perceived demand for non-State actors to design web accessibility standards such as WCAG. Essentially, WCAG provided a means for reducing the ambiguity of antidiscrimination legislation and reducing conflict between private enterprises and interest organizations over the application of web accessibility in practice. As a result, both private enterprises and interest organizations could point to WCAG as a set of clear criteria for ensuring web accessibility. However, as neither the UK nor the US have adopted web accessibility standards in legislative policies, ambiguity and conflict in both cases remain high. By adopting disability antidiscrimination legislation later than the UK and US, Norway was able to take advantage of existing web accessibility standards, including WCAG, to reduce legislative ambiguity and reduce the potential for conflict between private enterprises and interest organizations.

While the UK and US adhere to what Matland (1995) describe as symbolic implementation, Norway adheres more to a political implementation paradigm. The latter, according to the author, leads to competing coalitions, which results in local variations. While the UK and US cases show some features of symbolic implementation, the legitimacy of the W3C and the global pervasiveness of the web has promoted convergence on one level as opposed to variation. Nonetheless, this dissertation recognizes the immense variation in what constitutes web accessibility among different implementing organizations. In terms of Norway's more political implementation paradigm, Matland (1995) suggests that power plays a key role in achieving policy goals. In Norway, the rather weak role of civil society, which historically has focused on securing welfare benefits rather than advocating for social change, has put State actors in conflict with private enterprises. In this relationship, the political strength of the Norwegian State institutions have attempted to secure compliance with a largely uncooperative private sector. State actors have attempted to monitor web accessibility. However, as web accessibility by its nature is a dynamic and continuously moving target, due to the immense number of changes that occur on the web daily, an effective monitoring mechanism has not yet been established. Instead, the Norwegian government has relied on the LDO, a low-threshold private enforcement mechanism, and Difi, a monitoring and enforcement agency, to attempt to persuade and coerce private enterprises into compliance.

6.3.2 Long-Term Interactions Between Social Institutions and Policy Actors

An institutionalist approach to implementing social regulations provides a useful basis for considering the long-term interactions between social institutions and the actions and behaviours of

policy actors in web accessibility. Historical institutionalism provides a point of reference for considering the path dependencies and environmental contingencies that have influenced the design and implementation of web accessibility policies over time. Sociological institutionalism provides a point of reference for considering the diffusion of cultural attitudes and values that have led to institutional change. In particular, it provides an analytic framework for considering the sources of legitimacy and culturally-bound definitions of social appropriateness that have established a new set of institutional forms and practices. While Papers I and II draw upon a more historical institutionalist approach, Papers III, IV, V and VI draw upon a more sociological institutionalist approach.

Historical Contingencies and Path Dependencies

Research shows that ideas and interests generate preferences over time leading to the establishment of distinct national outcomes and unique institutional settings (Campbell, 1998; Steinmo et al., 1992). The results of this dissertation show that historical contingencies and path dependencies have influenced the design and implementation of web accessibility policies in the UK, Norway and the US.

From an historical perspective, national policy traditions have led to distinct approaches to adopting web accessibility standards in legislative policies in the UK and Norway. While in the UK, web accessibility standards remain voluntary, in Norway web accessibility standards are a requirement in antidiscrimination legislation. This is owing in large part to policy traditions, which have constrained the options available to State actors. In addition, distinct regional differences can be observed when comparing the US to the EU's approach to ICT accessibility in public procurement. In both regions, policy traditions structured the adoption of specific policy instruments used to promote ICT accessibility. In the US, policy traditions generated preferences for the adoption of ICT accessibility standards in public procurement legislation while in the EU policy traditions generated preferences that led to the adoption of voluntary ICT accessibility standards in public procurement.

The variation across the UK, Norway, US and EU in adopting standards in legislative policies is particularly interesting as the approach in the EU to adopting voluntary standards shares similarities with the UK's approach. This is in contrast to Norway's approach to adopting standards in legislative policies. In further contrast, the approach in the US is bifurcated between on the one hand supporting the development of voluntary standards for web accessibility at the W3C and on the other, adopting ICT accessibility standards as part of public procurement legislation in Section 508. Thus, taken together, three institutional settings for social regulation have emerged. In the UK and EU, standards remain voluntary and have not been adopted in legislative policies. In Norway, standards have been adopted in legislative policies and as a result are mandatory. Finally, in the US, one institutional setting has given rise to the adoption of standards in legislative policies – i.e., public procurement, while in another – i.e., antidiscrimination, standards remain voluntary.

Diffusion of Cultural Attitudes and Values

Research shows that the diffusion of cultural attitudes and values can produce institutional change (Hall & Taylor, 1996). In addition, new sources of legitimacy and culturally-bound definitions of social appropriateness can establish new institutional forms and practices (Hall & Taylor, 1996). The results of this dissertation shows that the disability rights movement introduced new cultural values and sources of cultural authority, which have led to institutional change.

Though beginning in the US, the disability rights movement gained momentum internationally leading to a diffusion of new cultural attitudes and values. Primary among these new attitudes and values was the conceptualization of disability as the result of social and attitudinal barriers that prevent persons with disabilities from participating in society. This was in contrast to prevailing conventions, which adhered to the more medical model of disability – i.e., that disability arises principally from an individual's impairment. The social model of disability established a new frame of meaning for antidiscrimination law and policy, particularly as it relates to indirect forms of discrimination – i.e., policies and practices that, though applied to everyone, disadvantage persons

with disabilities. When applied to the web, the social model of disability suggests that though a website may be available to everyone, organizational policies and practices may render that same website inaccessible to persons with disabilities, leaving them at a disadvantage. This premise for web accessibility, has served as the basis for the design of web accessibility standards, and has contributed to an international convergence in web accessibility policy, which has clustered around the adoption and use of WCAG.

The disability rights movement has also given rise to new sources of cultural authority. One of the principal tenets of the disability rights movement is the slogan “nothing about us, without us”. Essentially, it means that policies affecting persons with disabilities should not be designed or implemented without the direct and substantive participation of persons with disabilities. This ethic positioned persons with disabilities as a new source of cultural authority. The legitimacy of persons with disabilities and their representative organizations as policy actors was further reinforced with the adoption of the CRPD, which, under Article 33, recognized their role in implementing and monitoring the Convention. The adoption of the CRPD and national disability rights legislation, legitimized persons with disabilities and their representative interest organizations as lived experts and cultural authorities in defining what constitutes appropriate practice in all areas of disability rights including web accessibility.

As a result, the participation of persons with disabilities legitimizes the design and implementation of web accessibility policies. This explains, in part, the role of interest organizations as intermediaries, which have cooperated with private enterprises to translate and adjust web accessibility policies into practice. Private enterprises have seen persons with disabilities as sources of cultural authority in web accessibility, and, though not unequivocally, have, in part, acted against their formal goals to adopt new organizational practices. The cultural authority of persons with disabilities also helps explain the legitimacy of web accessibility standards such as WCAG, BS 8878, and EN 301 549, which were designed in collaboration with persons with disabilities and their representative groups. As such, these standards, in particular WCAG, have enjoyed broader dissemination in policy and practice.

The participation of persons with disabilities in the design of web accessibility standards have also legitimized standards organizations. The inclusion of persons with disabilities in the design of web accessibility standards, promotes trust in standardization and the adoption of standards as an effective means for ensuring web accessibility. This has, in part, helped institutionalize standardization as a social regulatory approach to promoting web accessibility, and interacted with the menu of socially acceptable policy options available to State actors. In effect, as standards organizations and standardization gains legitimacy, State actors trust in the processes and outputs of standardization and have delegated a certain amount of responsibility for web accessibility policy design to standards organizations.

7. Conclusion

I began this dissertation with the aim to investigate policy implementation in a previously unexplored area of social regulation – web accessibility. This aim was animated by broader social and political processes, including how we, as a society, have attempted to realize the rights of persons with disabilities by closing the gaps associated with the digital divide. With this aim, I posed an overarching research question, which I used to guide my inquiry.

How do social institutions affect the design and implementation of web accessibility policies?

From this question, I surveyed the literature and drew upon knowledge from different disciplinary, epistemological and theoretical backgrounds to construct an analytic framework (Figure 1) that I then used to theorize the relationships among different ideas, processes and actors involved in policy implementation. From my analytic framework, I formulated three sub-questions.

How and to what extent have relevant social institutions changed over time?

How has the institutional setting influenced the design and implementation of web accessibility policies?

How have policy actors implemented legal obligations in practice?

With my research questions providing scope and the analytic framework providing a map, I collected in-depth qualitative data from multiple sources representing three cases – the UK, Norway and the US. This extensive dataset provided the basis to draft and publish a series of papers, which form the empirical contribution of this dissertation. Each paper represents a slightly different focus area and as a whole provide a cohesive perspective on the theory and practice of implementing web accessibility policies.

In conclusion and in response to the overarching research question, I have found that overall social institutions affect the design and implementation of web accessibility policies by structuring participation and constraining decision-making in standardization. In other words, institutional norms, values and procedures have in certain cases prevented policy actors from participating in standardization and in others have mandated that policy actors representing persons with disabilities, participate in standardization. In addition, institutional norms, values and procedures have limited the options available to policy actors in standardization by predetermining the set of available options or promoting a default action.

In response to the first sub-question, I have found that social institutions have changed in response to the opportunities and incentives for non-State actors to participate in standardization and to promote policy implementation and compliance. Non-State actors have played a formative role in implementing web accessibility policies by contributing to and supporting standardization and in many ways circumventing the role of the State in putting web accessibility into practice. From this perspective, traditional State-centred views of compliance as a legal activity under the purview of lawyers and courts have given way to market-based solutions for collaboratively ensuring that websites adhere to industry guidelines for web accessibility. However, the extent to which compliance remains a purely legal or social construct depends on the setting.

In response to the second sub-question, I have found that the institutional setting has influenced the design and implementation of web accessibility policies by constraining the options available to State actors and structuring the implementation of web accessibility policies in practice. State actors are in many ways bound by history. The traditional “ways of doing things” and approaches to social regulation have acted as determinants of how State actors have dealt with new policy problems. The cases form a spectrum, where on one end policy traditions have led State actors to regulating web

accessibility through clear regulatory requirements and standards, and on the other where more market-based values and traditions have led State actors to regulate web accessibility through broad regulatory aims and persuasive policies. In addition, the decentralization of the State has influenced the ways in which policy actors respond to the implementation of web accessibility policies. With the shift from compliance as a State-centred activity to compliance as a form of collaborative governance, the institutional setting has been relocated away from traditional command and control forms of regulation to multi-stakeholder settings where consortiums of non-State actors both determine the requirements for achieving web accessibility and work together to achieve those requirements in practice. As part of this movement away from the State, market-based values for social responsibility and profitmaking have influenced how non-State actors produce web accessibility requirements and put them into practice.

In response to the third sub-question, I have found that policy actors have implemented legal obligations in practice by emphasizing the social norms, values and procedures of web accessibility and using audit and certification initiatives. Initially, putting web accessibility into practice requires non-State actors to respond to and engage with a process of change. Traditionally, private enterprises have engaged with new practices in response to the introduction of a law or regulatory requirement. However, the devolvement of State-based responsibility to non-State actors, has introduced new forms of engagement. In this respect, interest organizations have emphasized the principles and value systems that underscore web accessibility to engage private enterprises in making changes aimed at promoting web accessibility. As an outgrowth of this new channel of engagement, interest organizations and private enterprises have developed new mechanisms for ensuring trust. These mechanisms exist largely outside of the direct control of the State and have aimed at promoting trust through audit and certification.

While I have responded to the research questions simply and succinctly, I also recognize that these answers are an oversimplification of an extraordinarily complex and dynamic process that involves a plurality of relationships and evolves over time. In reality, implementing web accessibility policy is a much messier, more ambiguous and more convoluted phenomenon than what I have described. As an in-depth approach to research, qualitative methods provided a useful basis for examining this phenomenon, but, as is typical, the data provided a much wider opportunity for analysis than what I have covered in this dissertation.

In retrospect, I have made several choices that have influenced my conclusions. Though I selected the UK, Norway and the US as cases because of their complementary and contrasting characteristics, my conclusions may differ if I had incorporated other or selected different cases. For example, the inclusion of a post-communist State, a low- or middle-income country or a country from outside of the Global North would have changed the institutional setting depending on whether or to what extent the country had engaged with disability rights broadly or web accessibility specifically. Other countries would have introduced a greater variety of approaches to social regulation, to the use of policy instruments and to the involvement of non-State actors in policy design.

In addition, my examination of policy diffusion was shaped by the relationships among policy actors in the three cases. The inclusion of other cases could have provided further insights into how and to what extent policy actors have transferred web accessibility principles from and between jurisdictions, cultures and local organizations. Also, while this dissertation has adopted an historical approach to examining policy implementation and has drawn on policy and practice dating back to the mid-20th century, policy development in web accessibility is constantly changing. The conclusions that I have drawn in this dissertation may change with the advantage of another five, ten or fifteen years of data. Alternatively, my conclusions may have taken a different shape if I had taken an even longer view of policy implementation.

Finally, in terms of outcomes, the results of this dissertation have focused on web accessibility as it relates principally to persons with sensory or mobility impairments. While the data collection did not systematically focus on web accessibility outcomes, several participants provided insights about the

experiences of persons with sensory or mobility impairments using the web, which led me to focus on specific policies and organizations that aimed to remediate the barriers to using the web experienced by persons with visual and mobility impairments. While the experiences of persons with visual and mobility impairments are highly pertinent to the implementation of web accessibility policy, my conclusions may have varied if I had focused more specifically on web accessibility as it relates to a specific type of impairment (e.g., persons who are deaf or hard of hearing) or more explicitly aimed to include a broader range of perspectives on web accessibility, including the perspectives of persons with cognitive or psychosocial disabilities.

7.1 Summative Remarks

This dissertation provided empirical evidence from national and cross-national comparative investigations of how three countries have operationalized the political goal of ensuring that the web is accessible for persons with disabilities. This dissertation has adopted a mix of single and comparative case studies that cover 25 years of policy processes across three national contexts. Though challenging to summarize and synthesize the differences and similarities among the cases, the research design was necessary to triangulate data between the cases. Overall the evidence has shown that this operationalization – i.e., the translation of policy goals into practical measures – takes place through the dynamic relationships and negotiations of a variety of policy actors. These actors are compelled by diverse ideas, motivations, opportunities, considerations and interests. This dissertation also shows how established, pre-existing and often long lasting policy arrangements tend to influence the process of implementation – i.e., the process of putting the policy goal of web accessibility into practice. Institutional theory presupposes that such pre-existing policy arrangements – e.g. policy traditions, established legislation, approaches to administrative rulemaking, and the distribution of public and private responsibilities – constrain the introduction of any genuinely new political goals or practices. This strand of scholarship has inspired this dissertation and Figure 1 provides a useful interpretation of the interaction between institutions and other policy mechanisms.

While Figure 1 provided an integrated theoretical framework that combines several strands of the literature on policy implementation, this dissertation has not resolved all of the relationships captured in Figure 1. Instead, the empirical research has used different case studies to empirically probe and investigate specific relationships captured in Figure 1. Compared to conventional models of policy implementation, Figure 1 provides a more nuanced characterization of the actions, activities and instruments associated with social regulation. In their model of policy implementation, Hill and Hupe (2008) focus to a greater extent on where and which scale policy implementation takes place. While Figure 1 implicitly includes different administrative levels and individual, organizational and system scales, Hill and Hupe (2008) explicitly account for the variety of formal political-administrative institutions involved in policy implementation and the implementation activities that occur between individuals, organizations and socio-political systems.

Nonetheless, Figure 1 provides a more detailed framework for examining decision-making in terms of policy content and procedures than the model posed by Hill and Hupe (2008). While Hill and Hupe (2008) argue for a tripartite distinction between decisions regarding policy settings, goals and realization processes, Figure 1 focuses instead on the integrated relationship between policy design and diffusion processes (Figure 1 part 2), the implementation of social regulations through policy networks (Figure 1 part 3), and policy outcomes (Figure 1 part 4). This re-orientation of the implementation process from a focus on policy design – i.e., establishing policy settings and goals – and implementation – i.e., processes for realizing policy goals – to include processes related to the spread of ideas – i.e., policy diffusion – and outcomes in policy design provided a useful basis for examining the design and implementation of web accessibility policies in the UK, Norway, and the US.

This dissertation acknowledges that there are also alternative strands of scholarship, which emphasize opportunities for political change and policy innovation. Research on institutional change has stressed both internal and external mechanisms for realizing change in national political systems. For instance, this dissertation has shown how social movements and organizations of persons with disabilities have engaged in decades-long campaigns for web accessibility, universal design and more generally, for the rights of persons with disabilities to participate fully in society on an equal basis with others. This dissertation shows that the results of these campaigns, including the adoption of the CRPD as well as national legislation, provide evidence of institutional change. This dissertation further argues that the mechanisms that have underpinned these institutional changes – i.e., the reasoning for adopting web accessibility in policy and practice – have included economic, business and commercial rationales – e.g., to increase labour market participation of persons with disabilities or expand the market for accessible products and services. This dissertation has additionally shown that the interdependencies among regulators, interest organizations and private enterprises intermediate institutional changes as efforts to ensure compliance involve adapting and internalizing legal obligations and requirements.

This dissertation has also drawn on a strand of scholarship that has theorized institutional change as the result of the inspiration or influence of learning across national borders. Within this area of research, processes such as diffusion – i.e., the spread of ideas, knowledge, goals' and methods to reach them – are seen as a catalyst of institutional change. Much of the literature in policy diffusion has focused on whether and to what extent cross-national policy learning has resulted in increasing similarities – i.e., convergence – among the design and implementation of national law and policy. This dissertation has elaborated on the role of the US as a pioneer in adopting political goals and legislation related to disability antidiscrimination, including web accessibility. Later, the UK adopted similar goals inspired by developments in the US. As a result, the UK became a pioneer of web accessibility in the European context. Finally, Norway came as a relative latecomer, inspired and influenced by the UK and US as well as broader EU policy developments.

In papers I to VI, this dissertation reconciles and balances these strands of scholarship. This dissertation has shown that while there are, in some respects, indications of convergence between the UK, Norway and the US, existing institutional arrangements or policy traditions have resulted in distinct differences in approaches that the three countries have taken in designing and implementing web accessibility policies. Through this, this dissertation has shown the variety of policy implementation outcomes that have sometimes appeared paradoxically.

Similarly, this dissertation has engaged with another on-going debate in the scholarship on implementation. This debate concerns the utility of using a “top-down” perspective, which examines policy processes that occur largely as a result of decisions made at the top of political hierarchies. Alternatively, scholars have emphasized the “bottom-up” considerations, opportunities and behaviour of lower-level actors and their influence on actual practices. This dissertation has shown that “bottom-up” processes play a salient role in policy implementation and these processes are determinative of whether and to what extent web accessibility may be realized through public policy.

Finally, this dissertation has challenged much of the dominant thinking about whether and to what extent processes within public sector organizations, including regulatory agencies, actually determine web accessibility practices. In contrast, the findings in this dissertation support scholarship that has conceptualized governance as highly networked and interdependent. This dissertation has shown that the actual processes of realizing web accessibility as an operational and measurable outcome – e.g., in the form of standards, specific requirements or certifications – have been relegated to mostly non-State actors including interest organizations, standards organizations and networks of State and non-State actors and have involved self-regulation and voluntary compliance with web accessibility standards. This dissertation has illuminated the enforcement and compliance challenges faced by traditional forms of hierarchical government and top-down regulation that have occurred as the result of the demand to establish rules in a highly technical, socially complex and dynamic institutional environment.

In combination, this dissertation has emphasized that there is no simple and straightforward legal or policy approach to achieving web accessibility in practice. The rich and detailed data, which forms the empirical basis of this dissertation, realistically shows the multifaceted nature and the complex challenges of realizing this goal.

7.2 Recommendations for Future Research and Practice

This dissertation is a point of departure for future applied research on bottom-up implementation, co-regulation and policy networks. This Section aims to discuss briefly the recommendations for future applied research in other areas of ICT and web accessibility law and policy.

The results demonstrate the role of interest organizations and private enterprises in bottom-up implementation. Research and development of accessible ICT typically involves external funding provided by the public or private sectors. While complex economic mechanisms structure the commercial development of accessible ICT, competition law and policy broadly regulates market competition and private sector investments in ICT development. By way of illustration, Ferri (2015b) provides an analysis of economic supply and demand models for the commercial development of accessible ICT. Thus, regulatory agencies could use competition law to increase the supply of accessible ICT by structuring commercial incentives and enhancing opportunities for researching and developing accessible ICT.

For example, merger and acquisition and private equity regulations could encourage or obligate market actors in the technology sector involved in capital investment or restructuring to provide an accessibility policy or action plan. In addition, competition law could provide a mechanism for promoting compliance as competition law typically allows regulatory agencies to use a greater variety of interventions compared with regulatory agencies charged with enforcing web accessibility law and policy. Regulatory agencies in the US and EU involved in enforcing competition law may fine market actors for non-compliance, whereas regulatory agencies involved in enforcing disability antidiscrimination law and policy including web accessibility may only threaten or pursue litigation for non-compliance or pursue alternative dispute resolutions. Interest organizations in the US and Europe have yet to promote competition law as a mechanism for encouraging or forcing market actors to ensure accessibility and research has yet to fully examine the use of competition law to regulate ICT accessibility. Thus, the results of this dissertation provide a useful basis for examining the potential role of interest organizations and private enterprises in implementing and enforcing competition law to promote the research and development of accessible ICT.

In addition, the research and development of accessible ICT typically involves the creation and commercialization of intellectual property. For example private enterprises may patent new technology processes as an investment strategy. Intellectual property refers broadly to the exclusive ownership of creative ideas. For example, in the US, copyright law involves the doctrine of fair use, which provides exceptions to copyright protections. Conversely, patent law typically involves the doctrine of equivalents, which extends the scope of a patent protection to inventions with comparable functionality (Landes & Posner, 2009). Intellectual property rights fundamentally interact with web accessibility policy by structuring the commercial incentives and opportunities for researching and developing accessible ICT – i.e., patents have been used to, among other things, incentivize technological innovation. Thus, the results of this dissertation provide a useful basis for examining the role of interest organizations and private enterprises in promoting and evolving intellectual property rights as a mechanism for researching and developing accessible ICT.

Research has yet to examine intellectual property law as a mechanism for ensuring ICT accessibility. For example, the World Intellectual Property Organization has adopted the Marrakesh Treaty, which aims to, among other things, create internationally agreed upon exceptions to copyright for the benefit of the blind, visually impaired, and print disabled. In addition, in a US court case, *Authors*

Guild v. HathiTrust, the court found that digitizing books for accessibility purposes fell under the US's "fair use" doctrine (Blanck, 2014a). However, research has yet to fully investigate the implementation of intellectual property law and policy as a mechanism for promoting and ensuring ICT accessibility.

The results of this dissertation illuminate the influence of policy networks on policy design, diffusion and convergence. The policy network involved in web accessibility intersects with interest networks involved broadly in universal design. Universal design began as an architectural concept and the interest network that promoted universal design principles have largely focused on the built environment. Inspired by universal design principles, policy actors involved in web accessibility have attempted to apply universal design principles to ICT. Policy actors involved in web accessibility have contributed to the development of policies aimed at promoting universally designed ICT. Thus, the network of policy actors involved in universal design have interacted with and influenced the network of policy actors involved in web accessibility, and this relationship provides a useful basis for examining how policy actors transfer ideas and values between interest networks.

The present results also demonstrate the role of interest organizations and private enterprises in co-regulation. The use of voluntary audit and certification; national and international collaboration between interest organizations, private enterprises and regulatory agencies; and a consensus-based approach to standardization characterize web accessibility policy and other policy regimes, which rely on standardization as a form of social regulation. Thus, the results of this dissertation provide a useful basis for examining the inter-sectorial diffusion of co-regulatory approaches between different policy regimes.

Finally, the policy network involved in web accessibility also intersects with interest networks involved in assistive technology. The policy network involved in assistive technology predates the development of the web and focuses largely on rehabilitation and the social participation of persons with disabilities through the use of assistive technology. The assistive technology interest network has focused on providing publicly funded assistive technology to persons with disabilities. While web accessibility policies aim to remove barriers to the use of web content for persons with disabilities, policy actors typically recognize that many persons with disabilities use assistive technologies to access the web. Thus, the results of this dissertation provide a useful basis for examining how policy actors involved in web accessibility interact with policy actors involved in the development and distribution of assistive technologies.

Source of data

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Paper I

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Regulating Web Content: The Nexus of Legislation and Performance Standards in the United Kingdom and Norway

G. Anthony Giannoumis*

Despite different historical traditions, previous research demonstrates a convergence between regulatory approaches in the United Kingdom and Norway. To understand this convergence, this article examines how different policy traditions influence the legal obligations of performance standards regulating web content for use by persons with disabilities. While convergence has led to similar policy approaches, I argue that national policy traditions have an impact on how governments establish legal obligations for standards compliance. The analysis reveals that national policy traditions influenced antidiscrimination legislation and the capacity and authority of regulatory agencies, which impacted the diverging legal obligations of standards in the United Kingdom and Norway. The analysis further suggests that policy actors mediate the reciprocal influence between national policy traditions and regulatory convergence mechanisms. Copyright © 2014 John Wiley & Sons, Ltd.

INTRODUCTION

The United Nations (UN) Convention on the Rights of Persons with Disabilities (CRPD) recognizes, in Article 9, the necessity of “access ... to information and communications technologies” for persons with disabilities to “participate fully in all aspects of life” (UN, 2006).

This recognition obligates States Parties to develop legislation and standards to support the use of web content by persons with disabilities. This article compares how different historical relationships or policy traditions in the United Kingdom (UK) and Norway influence the legal obligations of standards that support the regulation of web content for use by persons with disabilities. I argue that policy traditions influence disability antidiscrimination legislation and the capacity and authority of regulatory agencies. I further argue that this influence structures national responses to new social challenges, such as web accessibility. Specifically, this article asks: “How do policy traditions influence the legal obligations of web accessibility performance standards?”

In Article 9, the CRPD recognizes barriers to social inclusion, stating that “to enable persons with disabilities to live independently and participate fully in all aspects of life” States Parties have an obligation to “ensure ... access on an equal basis with others, to ... information and communications technologies and systems” (UN, 2006). The

*Correspondence to: G. Anthony Giannoumis, Centre for Welfare and Labour Research at Oslo and Akershus University College of Applied Sciences, Postboks 4 St. Olavs plass NO-0130, Norway. E-mail: anthonyg@nova.no

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CRPD obligates States Parties to “take appropriate measures: to develop, promulgate and monitor the implementation of minimum standards and guidelines for the accessibility” of services available to the public. In practice, ratification of the CRPD binds governments to identify and remove barriers to the use of web content by implementing public policies (e.g., laws or regulations) and encouraging market-based initiatives (e.g., through corporate social responsibility). As both countries have ratified the CRPD, the UK and Norwegian governments must take appropriate measures and report on the implementation of minimum standards for accessibility.

Web content consists of different elements (e.g., text, images, sounds, videos, or animations) of internet-based information and communication that affect the user experience (Blanck, 2014; 2015, in press). User experience refers to the relationship between an individual and web content. This relationship has evolved and become more abstract and interactive as technologies that structure the presentation, function, and performance of web content continue to develop. Access to the internet and use of web content form the foundation of the information society and the global knowledge economy (Blanck, 2014; 2015, in press). Providing opportunities to connect to the internet and use web content fundamentally empowers people with disabilities to participate in the economic, political, and cultural activities that come with full and active citizenship (DISCIT, 2013). As a result, if not designed and produced to reflect the diversity of user experiences, web content imposes barriers to social inclusion and active citizenship. These barriers to social inclusion disproportionately impact persons with disabilities and contribute to economic, political, and cultural exclusion.

Regulations adopted by supranational, national, and regional governments recognize the importance of performance standards in regulating web content to provide social inclusion for persons with disabilities (“Accessibility for Ontarians with Disabilities Act,” 2005; Australia Human Rights and Equal Opportunity Commission, 2002; Department of Justice, 2012; EC, 2011; ictQatar, 2011; New Zealand Government Web Toolkit, 2013). Policy actors have promoted national harmonization with the World Wide Web Consortium’s *Web Content Accessibility Guidelines* (WCAG), a set of international performance standards (ISO / IEC 40500:2012) (ISO & IEC, 2012; W3C, 2008). Policy actors have additionally attempted to stimulate discourse on the financial benefits of web accessibility by promoting universal design (UD) in an effort to support access to the web for older persons. UD, originally an architectural concept, refers to an environment designed for and usable by everyone irrespective of age, ability or status. Policy actors have used UD to promote the means of creating web content that the widest possible population can use without modification. Despite these efforts, web content remains widely inaccessible for persons with disabilities (Blanck, 2014, this issue; 2015, in press; Easton, 2012, 2013; Ritchie & Blanck, 2003; Sandler & Blanck, 2005).

Implementing public policy solutions for web accessibility depends on effective monitoring and enforcement mechanisms. The CRPD requires States Parties to submit reports on the implementation of the CRPD to a monitoring body, the Committee on the Rights of Persons with Disabilities. States Parties may additionally ratify the Optional Protocol to the CRPD, which “recognizes the competence of the Committee [on the Rights of Persons with Disabilities] ... to receive and consider communications from individuals or groups of individuals ... who claim to be victims of a violation by that State Party” (UN, 2006). However, mechanisms for enforcing the CRPD focus

on national legal accountability (Easton, 2012). This national accountability means that where violations occur, States Parties should change public policy. The implementation of these policies devolves to national regulatory agencies, and implementation requires national regulators to work with market actors to achieve compliance. However, national regulatory agencies and market actors benefit from cooperation, while simultaneously confronting incentives to avoid cooperation (Potoski & Prakash, 2011). This conflict challenges national regulatory enforcement of policies supporting the CRPD.

The equal treatment approach to disability antidiscrimination originated in the United States (US), evolved into an international policy regime, and inspired the introduction of regulations in the UK and the European Union (EU) (Department of Justice, 2012; Halvorsen & Hvinden, 2009; "Public Law 101-336: Americans with Disabilities Act of 1990," 1994; "Public Law 111-260: Twenty-First Century Communications and Video Accessibility Act 2010," 2010). Equal treatment refers to a political principle that prohibits discrimination based on disability. This prohibition requires service providers to treat persons with disabilities on an equal basis with others. The indirect influence of US policy contributed to a convergence between the approaches to antidiscrimination regulation in the UK and Norway.

As previous research demonstrates, the approaches to antidiscrimination regulation in Norway and the UK converge (Halvorsen & Hvinden, 2009). These approaches consist of similar uses of policy instruments and the delegation of policy implementation to independent regulatory agencies. This research demonstrates that convergence occurred due to the influence of international (e.g., the US) and supranational (e.g., the EU, UN and Council of Europe) antidiscrimination policies (Halvorsen & Hvinden, 2009). However, previous research in the area of economic regulation demonstrated that, despite convergent approaches, the structure and competence of national regulatory agencies differs (Tenbücken & Schneider, 2004). Previous research also demonstrated distinctly national approaches to enforcement through litigation (Burke, 2002; Kagan, 2001).

The development of performance standards provides evidence of convergence, as standards organizations in the UK and Norway focus on broad stakeholder participation and consensus. The UK and Norwegian governments authorized independent national standards organizations to produce and sell standards. The role of web accessibility performance standards in the UK and Norway provides further evidence of convergence, as governments in both cases introduced performance standards to support social regulations instead of, or along with, other policy options. These policy options, such as licensing and certification, public procurement, funding research and development, and auditing, provide a range of solutions for achieving or enhancing web accessibility.

Although both cases adopted performance standards, the functional impact of those standards differs. In the UK, performance standards function not as technical requirements but as guidelines on processes for procuring or creating web content. Regulations in Norway, alternatively, refer to international performance standards, which function as technical requirements for achieving accessibility. The function and legal obligations of performance standards in the UK and Norway co-vary, as policy actors have promoted voluntary procedural standards in the UK and mandatory prescriptive standards in Norway. Despite convergence between the UK and Norway in the use of policy instruments, antidiscrimination legislation, and the introduction of web accessibility performance standards, the resulting functions and legal obligations of these standards vary.

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In practice, policy actors may change and influence the legal obligations of performance standards and, consequently, obscure the distinction between voluntary and mandatory standards. Therefore, this study provides a detailed explanation of regulatory convergence by examining the influence of policy actors on the introduction of performance standards. As the legal obligations of performance standards in the UK and Norway contrast, voluntary and statutory, respectively, this study investigates the margins of convergence established by previous research (Halvorsen & Hvinden, 2009). Despite convergence, due to the impact of international and supranational policy regimes, differences in national approaches to regulation and enforcement persist. These differences demonstrate the limited scope of convergence.

Norway presents a useful case to examine, as demands for increased public sector efficiency and social justice and equity led to social benefit reforms and the introduction of antidiscrimination regulations (Hvinden, 2009). To support these regulations, the Norwegian Government established and fragmented regulatory monitoring and enforcement across multiple agencies. The Norwegian Government enacted disability antidiscrimination regulations to supplement historically generous social benefits, such as the provision of assistive technology. Assistive technology refers to devices used to improve the functional capabilities of persons with disabilities.

Enacting disability antidiscrimination regulations demonstrates a move towards convergence; however, despite this convergence, Norway adopted statutory web accessibility performance standards that targeted the private sector before the UK, the US, and the EU. This early adoption meant that the Norwegian Government used performance standards to regulate private sector web content before regulatory progenitors such as the UK and the US. These mandatory standards contrast with earlier policy efforts in Norway, as the government initially hesitated to adopt a legislative approach to disability antidiscrimination.

The UK presents a useful comparator to Norway because disability antidiscrimination legislation in the UK foreshadowed disability antidiscrimination regulations in Europe. The UK initially approached disability through targeted antidiscrimination legislation, convergent with the US approach and then diverged from the US approach by integrating disability as a component of equality legislation. Therefore, antidiscrimination legislation transitioned from multiple pieces of legislation, each targeting a different ground of discrimination, to a single piece of legislation targeting multiple grounds of discrimination. The UK also transitioned from the administration of multiple regulatory agencies, each targeting a single ground of discrimination, to a single regulatory agency targeting multiple grounds of discrimination. The UK Government modeled this agency on prior regulatory reforms, which had progressively authorized regulatory agencies with a wider range of monitoring and enforcement options.

This article begins by presenting a framework for regulating web design. It then describes the empirical data collection. The analysis continues by describing the themes of social regulation of disability antidiscrimination in the two cases. It then examines the events that occurred between the adoption of antidiscrimination policy and the introduction of performance standards where legislation delegated rule-making authority for policy implementation. Finally, this article examines how policy actors respond to and reciprocally influence approaches to antidiscrimination enforcement and the legal obligations of performance standards. I conclude by summarizing and reflecting on the implications of the results, and provide recommendations for States attempting to

regulate information and communications technology (ICT) accessibility, based on the experiences in the UK and Norway.

FRAMEWORK FOR REGULATING WEB DESIGN

Previous research demonstrates that the international diffusion of ideas leads to convergence through policy learning (Hulme, 2006; Meseguer, 2005). Policy learning refers to the knowledge that policy actors acquire through the experiences of others. Policy learning generates institutional changes and a convergence of institutional norms, values, and procedures (Mahoney & Thelen, 2010; Wilensky, 2002). This convergence leads to institutional isomorphism (i.e., international compatibility), which provides evidence of convergent processes.

Alternatively, self-reinforcing historical processes demonstrate the perpetuity or consistency of national institutions. Previous research defines these path-dependent processes based on the increasing benefits that particular choices generate over time (David, 2003; Pierson, 2000). Despite substantial theoretical and empirical research examining institutional convergence and path dependency, limited empirical data exist that explore the margins and interactions of these concepts. Therefore, this article attempts to fill this gap by applying this framework to a unique regulatory regime, web accessibility. Using empirical data from the UK and Norway, this article examines how, despite convergence from supranational and international influences, national policy traditions have persisted and, as a result, influenced the legal obligations of performance standards.

Policy traditions emerge through social and political institutions that influence the preferences of policy actors in establishing the authority and capacity of regulatory agencies (Gilardi, 2004; Hall & Taylor, 1996). These institutions refer to formal or informal procedures, routines, norms, and conventions. Regulatory capacity refers to the ability of an agency to pursue an objective based on human and financial capital, time or opportunity, and regulatory supervision or oversight. Regulatory authority refers to the rule-making ability of an agency. Regulatory capacity and authority relate to agency competence, which refers to the ability of an agency to successfully engage in regulatory activities.

Social regulations attempt to influence market actors to achieve social outcomes through the use of persuasive, financial, and legislative policies (Bemelmans-Videc, Rist, & Vedung, 1998; Majone, 1993). The social regulation of web accessibility attempts to influence the actions of service providers to promote web content designed for use by persons with disabilities. Social regulation includes the application of antidiscrimination legislation to the web, which requires the design or adaptation of web content for use by persons with disabilities. The expectations and choices of policy actors, such as advocates, legislators, regulators, and representatives of standards organizations and private enterprises, influence the formation and implementation of policies promoting accessible web design. These web accessibility policies provide a regulatory basis for national and international performance standards.

Performance standards provide a reference for achieving outcomes (e.g., safety requirements for components, practices, or materials) through process-based (e.g., food safety procedures), prescriptive (e.g., measurements for building accessibility), or risk-based (e.g., potential side-effects of pharmaceuticals) approaches (May, 2011). Like other

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regulatory institutions, private interests influence the formation of performance standards and may consequently exclude public interests and impact policy objectives (Austin & Milner, 2001; Mattli & Woods, 2011). International agreements, including arrangements within the EU, UN, or World Trade Organization, promote the convergence of national standards as a mechanism for coordinating the market for goods and services providers (Bartley, 2011).

Performance standards support the implementation of web accessibility regulations by informing compliance strategies for service providers and supporting policy beneficiaries in enforcement efforts. National governments establish the legal obligations of those standards when the legislature, the judiciary, or a regulatory agency uses the standard in statutory policies, including case law and regulations (Jordana & Levi-Faur, 2004; Levi-Faur, 2011). Web accessibility performance standards emerged in the UK and Norway as a regulatory means for interpreting the requirements of antidiscrimination policies. The legal obligations of performance standards refer to whether policy actors consider the standard voluntary or mandatory (Werle, 2002; Werle & Iversen, 2006). Voluntary standards typify indefinite legal obligations due to the indirect, vague, inconsistent or nonexistent use of the standard in statutory policies. Mandatory standards typify definite legal obligations due to the clear and consistent use of the standard in statutory policies.

National governments define the legal obligations of compliance by adopting performance standards and delegating rule-making authority for regulatory monitoring and enforcement to regulatory agencies (Werle & Iversen, 2006). For regulatory agencies and the judiciary, performance standards provide a means for assessing and monitoring compliance and offer evidence for holding non-compliant organizations accountable. Regulatory monitoring and enforcement of prescriptive standards requires public sector investment in technical competence, and can provide an efficient means for settling disputes as measurable threshold criteria and specifications restrict broad interpretation (Gilad, 2011; May, 2011). Alternatively, procedural standards require comparatively less technical competence and public sector investment and may result in broader interpretation as organizations adopt rules based on process specifications (Gilad, 2011; May, 2011).

Despite similar approaches to regulating web accessibility in the UK and Norway, there are substantive differences in disability policy traditions and the legal obligations of performance standards. To understand the influence of policy traditions, I compare the UK and Norway as the most similar cases and examine how different disability policy traditions contribute to different outcomes in the legal obligations of performance standards (George & Bennett, 2005). To preclude intervening variables, the analysis traces the differences in policy traditions to the differences in the legal obligations of performance standards in both cases through the use of policy analyses and semi-structured interviews with policy actors.

DESCRIPTION OF DATA COLLECTION

This comparative case study applies new evidence to define and discuss how national policy traditions operate in a distinct regulatory regime. Qualitative data collection and analysis empirically support this case study. To assess policy traditions, this study uses a document analysis of primary source statutory and non-statutory policies. These

policies include fundamental pieces of disability rights legislation in the UK and Norway and associated national and supranational policies. To assess the relationship between policy traditions and policy actors, this study uses the results of semi-structured interviews conducted with a purposive sample of 21 participants recruited in the UK ($n = 11$) and Norway ($n = 10$) via snowball sampling and the social networking website LinkedIn. The analysis uses a random two-digit identification (ID) number for each participant. Participants represented advocacy organizations (ID 01, 02, 03, 04, and 05), government agencies (ID 06, 07, 08, and 09), private enterprises (ID 10, 11, and 12), standards organizations (ID 13 and 14), regulatory agencies (ID 15 and 16), civil society organizations (ID 17 and 18), quasi-public agencies (ID 19), subject matter experts (ID 20), and public-private sector coalitions (ID 21). While not routinely requested to provide information on disability, six participants self-identified as blind or partially sighted.

The interview guide included questions related to: the role of ICT accessibility in the public and private sectors; the relationships among private enterprises, standards organizations, advocacy organizations, regulatory agencies and policymakers; the relation between technology innovation and practice; the barriers and incentives to web accessibility; the role of standards in web accessibility; the resources needed to achieve broader and higher levels of web accessibility; and the lessons learned from national experiences. The semi-structured interviews pursued varying lines of inquiry based on the participant's knowledge and the information provided.

SOCIAL REGULATION IN DISABILITY ANTIDISCRIMINATION

The similarities in approaches to disability antidiscrimination demonstrate convergence between the UK and Norway (Halvorsen & Hvinden, 2009; Hvinden, 2009). In the UK, disability policy first emerged in response to the charity and medical models of disability, which necessitated rehabilitation and public beneficence (Bickenbach, Chatterji, Badley, & Ustün, 1999). These models prompted legislation such as the Disabled Persons Act 1944, which obligated private enterprises to employ persons with disabilities. As a basis for social policy, the social and rights models of disability focused on eliminating social barriers to realize rights for persons with disabilities and replaced the medical and charity models (Barnes & Mercer, 2009; Oliver & Barnes, 2012; Shakespeare, 2006). Reflecting this changing conceptualization of disability, policies such as the Chronically Sick and Disabled Persons Act 1970 and the Disabled Persons Act 1981 aimed to promote accessibility by eliminating barriers to the built environment.

In response, the UK disability rights movement advocated for a comprehensive law that made discrimination against persons with disabilities illegal and recognized the social barriers and exclusion that confronted persons with disabilities (Roll & Great Britain Parliament, & House of Commons Library, 1999). At the same time, the Conservative Party leadership of the UK Government aimed to reduce public spending and encourage voluntary compliance with regulations (Enable, 1994; Roll et al., 1999). The efforts of the disability rights movement and the Conservative Party leadership of the UK Government culminated with the Disability Discrimination Act 1995, the first

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comprehensive disability antidiscrimination policy in the UK to promote equal treatment by regulating employment and the provision of goods, facilities, and services. The Disability Discrimination Act 1995 represented a paradigmatic shift centered on a regulatory approach to comprehensive disability antidiscrimination law. This approach supported the realization of disability rights and required minimal direct public sector financial investment.

The Equality Act 2010 repealed the Disability Discrimination Act 1995 and aimed to harmonize antidiscrimination policies, reduce inequality, eliminate discrimination, and increase equality of opportunity on a variety of grounds. Upon repeal, legislators transposed the provisions of the Disability Discrimination Act 1995, which remained largely unchanged, to the Equality Act 2010. However, rather than transposing guidelines applicable under the Disability Discrimination Act 1995 to the Equality Act 2010, UK regulators chose to selectively replace guidance documents.

The obligation under the Disability Discrimination Act 1995 to anticipate and remove barriers to information and services by making reasonable adjustments forms the legal foundation for web accessibility (Lawson, 2008). Lawyers and advocates in the UK applied the principles of reasonable adjustment to the web to promote web accessibility. Under the Disability Discrimination Act 1995, regulatory guidance required service providers to make their websites accessible. However, regulations did not mandate compliance with performance standards. The updated guidelines based on the Equality Act 2010 also included web accessibility requirements, and subsequent policies from the UK Government clarified the requirement by promoting the use of performance standards, though voluntary, as consistent with the Equality Act 2010. Pursuant to this application, the British Standards Institution, authorized as the national standards body of the UK, developed BS 8878:2010, a code of practice, which focused on a business process approach to web accessibility (BSI, 2010).

In Norway, regulatory policies for disability antidiscrimination emerged later than in the UK. These policies initially incorporated disability-related provisions in employment policies such as the Working Environment Act 2005, which repealed the Act Relating to Worker Protection and Working Environment 1977 ("Working Environment Act," 2005). These policies signified a period when advocacy organizations and disabled peoples organizations (DPOs) in Norway focused primarily on improving welfare benefits. DPOs refer to advocacy organizations led and operated by persons with disabilities. The Norwegian Government hesitated to impose regulations at the time, which absolved the government from negotiations between trade unions and employers (Halvorsen & Hvinden, 2009). Rather than regulating web accessibility through legislation, the Norwegian Government instead enacted persuasive policies such as eNorway 2009, which aimed to influence the role of ICT (Norwegian Ministry of Modernisation, 2005). Persuasive policies such as Norway Universally Designed by 2025 also situated the accessibility of the built environment as a component of UD (BLID, 2009). In 2010, the Norwegian Government adopted disability regulatory policies in direct response to EU legislation. These policies included regulations for accessible bus, boat, and train transport and antidiscrimination (BLID, 2010; JD, 2010; Ministry of Transport [Samferdselsdepartementet], 2011, 2013).

In Norway, convergent processes introduced by the indirect influence of disability antidiscrimination policy in the US and EU mediated the regulatory approach to disability antidiscrimination. Similar to the UK, contiguous and prevailing policy discourses led to the enactment of the Antidiscrimination Accessibility Act 2008. Policy

actors attempted to progressively strengthen equality of target groups through a domestic antidiscrimination policy regime (BLID, 1978, 2008a; KRD, 2004). Government and advocacy organizations in Norway focused on realizing these rights, including accessibility of ICT, through international obligations with the EU, the Council of Europe, and the UN (Council of Europe, 1952, 1965; Council of the European Union, 2000, 2004; Law Commission [Lovutvalget], 2005; United Nations, 1988). Private enterprises supported this regulatory approach to avoid overlapping policy applications (Appointed Committee [Utvalg oppnevnt ved kongelig resolusjon], 2002).

A separate discourse occurred within the public sector, where demands from the aging population and increased costs of social benefits promoted economically efficient and sustainable policy solutions (Hvinden, 2009). These discourses resulted in the Antidiscrimination Accessibility Act and a paradigmatic shift that situated accessibility and UD within antidiscrimination regulations. This approach attempted to prevent discrimination against persons with disabilities, while addressing the aging population through UD, without increasing expenditure for social benefits.

The Antidiscrimination Accessibility Act established the general obligation to promote the UD of publicly available goods and services, including ICT (BLID, 2008a). This obligation functioned similarly to the reasonable adjustment provisions of the Disability Discrimination Act 1995 and demonstrates the convergence between disability policy instruments in the UK and Norway. In response to the Antidiscrimination Accessibility Act, the Norwegian Government adopted regulations for the UD of ICT (FAD, 2013). The regulations require the design of websites to conform to international accessibility performance standards (WCAG 2.0/ISO/IEC 40500:2012 level A and AA).

DELEGATING AUTHORITY FOR POLICY IMPLEMENTATION

The introduction and implementation of comprehensive disability antidiscrimination legislation and the authority and capacity of national regulatory agencies provide a framework for understanding how the UK and Norwegian governments promoted performance standards as a component of social regulatory policy. Both governments promoted performance standards instead of, or along with, other policy options, such as licensing, training, compliance testing, public procurement, or auditing. Antidiscrimination legislation demonstrates a convergence in the approach to disability policy, as legislation in both cases involves the recognition and realization of disability rights and efforts to promote public sector economic efficiency and financial restraint. In both the UK and Norway, the conjuncture of separate policy discourses and changes in policy goals led to paradigmatic shifts in disability policy (Hall, 1993). These shifts generated changes in regulatory capacity and authority. However, regulatory authority and capacity vary between and within each case. The next sections present these changes and identify where policy traditions contribute to variation between the UK and Norway.

Initial Agency Design and Oversight

In the UK, enactment of the Disability Discrimination Act 1995 authorized the National Disability Council (NDC) “to advise the Secretary of State” and provided

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the NDC the capacity to monitor “matters relevant to the elimination of discrimination”, “measures ... to reduce or eliminate such discrimination” and “matters related to the operation of [the Disability Discrimination Act]” (“Disability Discrimination Act,” 1995; Roll et al., 1999). The UK Government limited the authority of the NDC “with respect to the investigation of any complaint that may be the subject of proceedings” (“Disability Discrimination Act,” 1995). The UK Government authorized the NDC to issue Codes of Practice at the request of the legislature which, though not legally binding, litigants could use in civil proceedings (Roll, Great Britain Parliament, & House of Commons Library, 1999). A 1999 Green Paper stated that the NDC “did not have the powers of enforcement” and criticized the NDC’s limited authority, which prevented the agency from investigating complaints that may lead to trial (Roll et al., 1999).

As the UK Government limited public sector regulatory enforcement authority, the efficacy of and compliance with the Disability Discrimination Act 1995 relied heavily on the institutional capacity of DPOs and civil society organizations to use judicial enforcement. A UK standards organization representative describes the relationship between the Disability Discrimination Act 1995 and the judiciary, stating, “The only way you could ever say someone was DDA compliant, was if it’s gone through the due legal process and the judge has said you’ve complied with the law in this case, that’s the only way” (ID 13). This dependence on judicial advocacy demonstrates how, despite the creation of a new regulatory agency, the Disability Discrimination Act 1995 relied on a previously established tradition for policy enforcement. Although relying on established judicial enforcement institutions, this approach to antidiscrimination also represented a departure from policy traditions that established other agencies in the UK such as the Equal Opportunities Commission and the Commission for Racial Equality, which the government authorized to enforce relevant antidiscrimination legislation.

The Norwegian Government enacted the Discrimination Act 2004 to prohibit discrimination based on protected characteristics and, in conjunction, established the Equality and Anti-discrimination Ombud (LDO) under the Ministry of Children, Equality, and Social Inclusion (BLID). The legislation that established the LDO represented the first instance that the Norwegian Government explicitly included disability in antidiscrimination policy. The Norwegian Government authorized and provided the capacity for the LDO to monitor and “contribute to the implementation” of national and supranational legislation, including, upon enactment, the Antidiscrimination Accessibility Act (BLID, 2004). The LDO acts as a first point of contact for individual discrimination complaints and has the regulatory authority to issue non-binding statements on the application of the law. Additionally, the Antidiscrimination Tribunal, authorized to hear appeals from LDO statements and make binding decisions, reinforced public sector enforcement capacity. The Norwegian Government established the LDO and the Antidiscrimination Tribunal based on the Equality Ombud and the Equality Tribunal, which the Norwegian Government established under the Equality Act 1978 to promote the equal opportunity of women. This replication of previously established regulatory agencies demonstrates that Norway relied on prior enforcement policy traditions in establishing new regulatory authority and capacity. However, a Norwegian advocate describes the limitations to this approach stating, “the Ombud has no power ... they have no means for punishment or fines or anything ... I think you can go to [court], but nobody does. That costs a lot of money and you lose” (ID 05).

In 2004, antidiscrimination policies in Norway, including the Discrimination Act, had not explicitly named disability as a protected ground. Nevertheless, the Norwegian Government authorized the LDO to hear discrimination complaints on the grounds of disability. As antidiscrimination policies had not previously targeted persons with disabilities, the creation of the LDO did not directly involve DPOs. Nevertheless, advocacy organizations largely supported establishing the LDO (BLID, 2005). The lack of explicit recognition of disability as a protected ground led to a 2005 White Paper published by a legislative committee on improving accessibility for all. This White Paper included a draft law prohibiting discrimination on the basis of disability (Law Commission [Lovutvalget], 2005).

Advancing Antidiscrimination through Agency Reform

In the UK, agency reform established the Disability Rights Commission (DRC), which replaced the NDC, and expanded the regulatory authority of the public sector to enforce the Disability Discrimination Act 1995. Despite widespread support, DPOs and advocacy organizations expressed two areas of concern regarding the regulatory capacity of the agency: funding and membership. These areas conflicted with the concerns of private enterprise representatives. Private enterprises argued against the majority disability membership requirement and additionally that cooperative agreements should not constitute a legal obligation (Roll et al., 1999).

The UK Government authorized the DRC with a flexible range of enforcement options. These options included the formal authority to conduct investigations of non-compliance, issue notices of non-compliance, apply for a court order to end persistent non-compliance, and provide legal assistance. The UK Government also authorized the DRC with comparatively fewer participatory approaches to enforcement, including the authority to enter into agreements in lieu of enforcement and to provide conciliation services. Therefore, the DRC's authority predominantly consisted of formal administrative approaches to enforcement. The authority and capacity of the DRC also demonstrate where the UK relied on prior policy traditions, which established other antidiscrimination regulatory agencies (e.g., the Commission for Racial Equality). Nevertheless, the focus on administrative enforcement efforts limited the competence of the DRC. A UK advocate articulates this dilemma, stating, "[the DRC has] not done anything to bring the rest of the nation outside so they know this is their problem" (ID 02).

The UK Government also authorized the DRC to issue statutory Codes of Practice, which offer practical guidance for service providers. However, rather than issuing a Code of Practice detailing web accessibility requirements based on international performance standards, the DRC commissioned the British Standards Institution in 2005 to produce the procedural standard PAS 78:2006 (Easton, 2012). The British Standards Institution appointed a steering group to develop PAS 78 as a non-consensus guideline. This procedure requires stakeholder participation but not unanimous agreement (BSI, 2012). The steering group included representatives from DPOs, advocacy organizations, media companies, UK Government agencies, regulatory agencies, technology companies, universities, private enterprises, and professional associations. The British Standards Institution produced PAS 78 as a guidance document for business to business procurement of website design (BSI, 2006).

In 2003, the UK Government issued a consultation and review of antidiscrimination regulatory agencies that led to a White Paper proposing the establishment of the

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Equality and Human Rights Commission (EHRC) (Great Britain Dept. of Trade and Industry & Great Britain Dept. for Constitutional Affairs, 2004). This White Paper, as well as broader government initiatives, introduced an emerging framework for enforcing web accessibility obligations in the UK (Gershon, 2004). This framework emphasized efficacy and efficiency and promoted stakeholder engagement and strategic solutions. The DRC recognized the need for harmonized regulation but stressed that the government should adequately resource the EHRC to promote active roles for disability representatives, balance awareness and enforcement, and realize the objectives of the agency. Private enterprise representatives supported establishing the EHRC as a simpler, efficient, and, owing to agency guidance, a more effective means for achieving compliance (Keter & Great Britain Parliament House of Commons, 2005).

In 2006, the EHRC replaced the DRC and two other antidiscrimination regulatory agencies. This composite regulatory agency based on existing regulatory institutions illustrates where the UK again relied on policy traditions to determine the capacity and authority of regulatory reform. New formal (e.g., inquire into potential non-compliance, require action plans on notice, and intervene in judicial review) and participatory (e.g., provide grants, and collaborate with other human rights based organizations) approaches expanded the regulatory flexibility of the EHRC. The EHRC also retained the authority to issue Codes of Practice, admissible as evidence in civil proceedings, and disseminate information, undertake research, and provide education and guidance. However, this organizational reform effort led to mixed results.

A UK standards organization participant discusses the impact this reform had on agency competence, stating:

In terms of regulatory function, the EHRC's budget is drastically being reduced, its remit is being tightened and reduced, its staffing levels are being reduced ... they will focus on big high level strategic legal cases that they see as having the most impact for the most people. That's fine for a national regulatory function, the problem with that is where does all the other little stuff go? (ID 13)

In 2011, the UK Government initiated a public consultation on reforming the EHRC, and in response, the government agreed to proceed with legislative efforts to reduce the authority and capacity of the EHRC to "clarify the EHRC's remit and improve its ... value for money" (Government Equalities Office, 2012).

Unlike the iterative reform efforts in the UK, agency reform in Norway occurred as separate initiatives. The Norwegian Government established the Delta Center prior to the LDO as a state project and then as a government agency to promote social policy objectives and inform the National Council for the Disabled (Delta Center [Deltasenteret], 2002). The National Council for the Disabled acts as a public sector advisory agency. As the Norwegian Government established the Delta Center based on a state project, this reform relied on previously established public sector competence.

A 2001 White Paper formed the basis for the Delta Center's objectives, which included eliminating barriers for persons with disabilities through the use of ICT (Appointed Committee [Urvalg oppnevnt ved kongelig], 2001). A Norwegian standards organization representative describes the regulatory role of the Delta Center, stating, "today you have a lot of guidelines on ICT for instance the Delta Center guideline ... they are the most active members of my committees by the way" (ID 14). Although the Norwegian Government limited the authority of the Delta Center to providing information and training, the capacity of the agency to produce and disseminate

knowledge enabled the Delta Center to develop competence in the application of UD to ICT (Delta Center [Deltasenteret], 2002).

In 2008, a budget and resource reallocation established the Agency for Public Management and eGovernment (difl) under the Ministry of Government Administration Reform and Church Affairs (FAD). The Norwegian Government established difl with the capacity to strengthen the implementation of ICT in the public sector by emphasizing quality, efficiency, participation and effectiveness. Establishing difl centralized national ICT policy by combining three separate agencies authorized to advise the public sector, establish quality criteria for public sector websites, and increase the use of the web in public service provision. In establishing difl, the Norwegian Government adopted the goals of previously established regulatory agencies and, similar to establishing the EHRC in the UK, relied on policy traditions to develop a centralized approach to regulatory capacity and authority.

Fundamentally, the Delta Center and difl supported the public sector's capacity for regulating the design of ICT, including the web, through performance standards. A Norwegian Government representative articulates the role of public agencies in standardization, stating:

I think it's important to have the government, governmental institutions for instance difl, in Norway, in the standardization committee, so they know what is going on, so they can say after the standard is made that they want to point to that standard and say that it should be used (ID 14)

In 2008, the Ministry of Children, Equality, and Social Inclusion proposed a law prohibiting discrimination on the basis of disability (BLID, 2008b). The proposal suggested that Standards Norway develop national performance standards through a multi-stakeholder process, including the Delta Center and difl.

Antidiscrimination legislative reform

In the UK, a 2007 Green Paper recommended establishing a single legislative framework, aligning the objectives of the EHRC, and furthering the goals of efficacy, efficiency, and partnership by enacting the Equality Act 2010 (Great Britain Dept. for Communities and Local Government, 2007). The Green Paper endorsed the business case for equality, which promotes voluntary compliance with antidiscrimination policies, and stated that the Equality Act 2010 intended to improve the efficacy of antidiscrimination legislation by harmonizing and simplifying the law. As mentioned, the Equality Act 2010 replaced the Disability Discrimination Act 1995 and other antidiscrimination legislation. This legislative reform illustrates the development of antidiscrimination legislation from a policy tradition where regulations, such as the Disability Discrimination Act 1995, targeted discrimination based on separate grounds.

Although the Equality Act 2010 did not change the authority of the EHRC, the legislation impacted the relevance of previous guidance established by the DRC and EHRC. The EHRC delayed issuing regulatory guidance on the transition to the Equality Act 2010, and rather than transposing the guidelines applicable under the Disability Discrimination Act 1995 to the Equality Act 2010, the EHRC chose to selectively replace specific guidelines and Codes of Practice. As these regulatory policies impact compliance

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efforts, the actions of the EHRC demonstrate the influence of policy actors on institutional enforcement under the Equality Act 2010.

In 2010, EHRC guidance under the Disability Discrimination Act 1995 stated that service providers must make their websites accessible (EHRC, 2010). While guidance documents did not define web accessibility, the EHRC referred to WCAG as the international standard for achieving accessibility. After enactment of the Equality Act 2010, the EHRC introduced updated guidelines based on the new law; however, the EHRC referenced web accessibility standards as separate guidance under the Disability Discrimination Act 1995. A UK private enterprise representative articulates this inconsistency, stating, "I think we have gone a step backwards ... there are certain parts of the Equality Act which ... tend to confuse the issues. And I think web accessibility certainly is one of those" (ID 12).

In Norway, the adoption of the Antidiscrimination Accessibility Act strengthened legal protections on the basis of disability. The enactment of this legislation expanded the authority of the LDO; however, the Antidiscrimination Accessibility Act did not clarify the obligation for the UD of ICT, specifying only that "Public undertakings are to make active, targeted efforts to promote universal design" (BLID, 2008b). Similar to the enactment of the Discrimination Act and authorization of the LDO, enacting the Antidiscrimination Accessibility Act demonstrates the policy tradition of expanding regulatory authority with the introduction of antidiscrimination regulations.

The 2008 Ministry of Children, Equality, and Social Inclusion proposal, discussed previously, recommended that difi provide guidance and enforce regulations for paragraph 11 of the Antidiscrimination Accessibility Act on the UD of ICT (BLID, 2008b). A Norwegian advocate articulates a fundamental limitation to these regulations stating:

They didn't understand the ICT world, universal design at all, so it came in late in the process of the legislation and ... when people know what is the requirement they won't do anything more and that's not universal design, ... we cannot reach the goal of equal participation and universal design of ICT only through law, only through legislation, it's impossible. (ID 02)

The proposed regulations additionally recommended, due to the Delta Center's competence in accessible ICT, that difi and the Delta Center collaborate in regulating and enforcing the law (BLID, 2008b).

Although the proposal did not delegate any formal rule-making abilities to the Delta Center, the proposal recommends shared responsibility in regulating web content and contributes to a division of regulatory authority in the public sector. The Antidiscrimination Accessibility Act also indicates that enforcing the UD of ICT will include penalties for noncompliance. However, this unprecedented use of financial instruments for regulating web accessibility, located outside of the authority of the LDO, further contributes to the division of regulatory authority in the public sector.

Promoting Performance Standards

Leading up to the introduction of BS 8878, the UK Government and industry advocates collaborated to argue in favor of establishing the EHRC and adopting the Equality Act 2010 (Great Britain Dept. for Communities and Local Government, 2007; Great Britain Dept. of Trade and Industry & Great Britain Dept. for Constitutional Affairs,

2004). The development of BS 8878, a code of practice for web accessibility, focused on a business process approach to web design. The British Standards Institution developed BS 8878 as an update to PAS 78, and appointed a committee (IST/45) to develop BS 8878 as a consensus standard. Consensus refers to leadership and decision-making that include stakeholder agreement as a substantive criterion (BSI, 2008). IST/45 included many of the same representatives that participated in developing PAS 78, including DPOs, media companies, technology companies, universities, private enterprises, advocacy organizations, legal service providers, professional associations, and the UK Government. This development process demonstrates where the British Standards Institution relied on consensus, a previously established institutional procedure, and used PAS 78 as a basis to develop BS 8878.

In the UK, instead of technical requirements, BS 8878 provides guidelines on processes for procuring and creating web content. Therefore, the formation and introduction of BS 8878 as a procedural standard did not conflict with contiguous efforts to establish prescriptive standards in the EU through M376. After the British Standards Institution published BS 8878, the EHRC referenced the standard and WCAG as guidance applicable under the Disability Discrimination Act 1995. In 2011, the UK Government and the EHRC recognized the role of BS 8878 as a procedural standard for web accessibility and promoted BS 8878 as "consistent with" the Equality Act 2010 (Parliamentary Office of Science and Technology, 2012). The UK Government acknowledged that obligations under the CRPD, EU law, and the Equality Act 2010 require reasonable adjustment for private sector websites to achieve accessibility (Parliamentary Office of Science and Technology, 2012). These obligations demonstrate where the UK Government relied on a policy tradition for reasonable adjustment established under the Disability Discrimination Act 1995 to justify and encourage the voluntary adoption of BS 8878.

Despite regulatory approval, the EHRC has not referenced BS 8878 as part of its Code of Practice for service providers under the Equality Act 2010 (Great Britain & EHRC, 2011). Although the EHRC has the authority and capacity to promote a legal obligation to comply with BS 8878, the standard remains unconnected to regulatory policy and policy actors and the UK Government consider it to be voluntary. Consequently, while allowable in civil proceedings, the judiciary has the responsibility for determining if compliance with the standard constitutes reasonable adjustment. The decision by the EHRC and UK Government to limit the standard's legal obligation further restricts the authority of agencies and organizations involved in evaluating or auditing compliance. A UK private enterprise representative discusses the limits of voluntary compliance, stating, "It [BS 8878] only means something when people use it. And I think, precisely, the issue is that there is no driver as such which would actually convince web developers and organizations to make use of that standard" (ID 12).

Although the UK Government used BS 8878 to encourage voluntary compliance, efforts to disseminate the standard through the EHRC or the British Standards Institution have not yet resulted in widespread adoption. The development of BS 8878 illustrates the evolution of the voluntary approach to regulatory compliance, a policy tradition that the UK conservative government advocated for prior to the adoption of the Disability Discrimination Act 1995 (Enable, 1994; Roll et al., 1999). However, this approach differs from other antidiscrimination regulatory approaches in the UK, which directly reference performance standards produced by the British Standards Institution ("The Building Regulations," 2000).

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In 2010, in Norway, difi commissioned Standards Norway, responsible for national ICT standards, to report on the introduction of mandatory standards for the web (Rudolph Brynn & Standards Norway [Standard Norge], 2010). The report stated that promoting performance standards for the UD of web content would have a positive social and economic impact. In 2012, difi published information and guidance on the UD of websites, which identified the need for regulations connected to performance standards (difi, 2012). Difi referred to WCAG (version 2.0) as a standard for achieving UD of web content. However, difi stated that achieving UD may require national guidance.

In 2012, 4 years after the enactment of the Antidiscrimination Accessibility Act, the FAD proposed regulations pursuant to the UD of ICT. The proposed regulations leveraged the capacity of the Delta Center and authorized difi to monitor and audit compliance of paragraph 11 of the Antidiscrimination Accessibility Act, pertaining to the UD of ICT (FAD, 2013). A Norwegian standards organization representative articulates concerns about the delay in issuing the regulations, stating, "I'm worried about the lack of encouragement by the government right now for private enterprises, because it's not a good signal that you've postponed the regulations for such a long time even for the public sector" (ID 14). The public consultation included as part of the FAD proposal represented a variety of policy actors; however, the majority represented government agencies. Advocacy organizations and DPOs also contributed to the consultation, and trade associations, private enterprises, universities and research institutes, though essential for the participation of a wide range of interests, represented a minority. The public consultation from the FAD proposal included a submission by Standards Norway to provide national performance standards for the UD of web content (Rudolf Brynn, Lindelien, & Mehus, 2013).

The FAD proposal coincided with a proposed EU directive on the accessibility of public sector websites. The proposed directive includes a request (M 376) for the European standards organizations to develop standards for accessible ICT (EC, 2005). The European standards organizations aim to develop performance standards to promote the harmonization of the European economy (EC, 2005; Standards Norway [Standard Norge], 2013). As members of the European standards organizations, the British Standards Institution and Standards Norway may not develop standards that conflict with the proposed EU directive. In 2013, the Norwegian Government approved the FAD proposal as part of the regulations pursuant to the Antidiscrimination Accessibility Act. However, rather than referring to the development of a national standard, the regulations refer to prescriptive international standards (WCAG 2.0/ISO/IEC 40500:2012 level A and AA). Policy actors in the US and EU anticipate that the standards emerging from M 376 will harmonize with WCAG. By referring to WCAG, the FAD regulations harmonize with EU policies, and this harmonization demonstrates convergence in the approaches to web accessibility between Norway and the EU.

LEGAL OBLIGATIONS AND APPROACHES TO ENFORCEMENT

While the UK and Norway may share similar approaches to the use of policy instruments for antidiscrimination regulation, the authority and capacity of regulatory agencies diverge. These institutional differences impact the social inclusion of persons with

disabilities, because regulatory agencies support enforcement mechanisms that influence the remediation of barriers to inaccessible web content. Therefore, enforcement challenges may implicate States Parties, given the obligation under the CRPD to ensure access to ICT for persons with disabilities. Regulatory enforcement in the UK resembles the adversarial and legalistic traditions of the US (Burke, 2002; Kagan, 2001). The UK typifies these traditions as policy actors rely on the use of lawyers, legal threats, and legal contestation. Nevertheless, antidiscrimination policies in the UK have not resulted in influential web accessibility litigation.

As previously demonstrated, the constrained authority of the NDC exclusively limited enforcement options to pre-existing arrangements of judicial enforcement. This dependence on judicial enforcement meant that plaintiffs experienced high financial and administrative costs in bringing complaints against private enterprises due to the costs of legal assistance; delays caused by formal procedures for filing complaints and opportunities for judicial appeal; and uncertainties inherent in the unpredictable, variable, and reversible character of the common law system. Therefore, DPOs and advocates encountered barriers to asserting disability rights.

The enactment and initial implementation of the Disability Discrimination Act 1995 lacked the prescriptive detail that regulations and case law provide. Despite the emergence of case law in the UK detailing and interpreting obligations for reasonable adjustment under the Disability Discrimination Act 1995, policy actors could not expect the judiciary to immediately or efficiently harmonize around new applications of reasonable adjustment (e.g., obligations related to web accessibility). Therefore, unfavorable or nationally fragmented judicial outcomes became a further risk for policy proponents. These barriers demonstrate how regulatory and enforcement institutions influenced policy actors' (i.e., DPOs and regulatory agencies) expectations of compliance.

In response to the challenges of enforcing the Disability Discrimination Act 1995, the UK adopted an administrative approach to enforcement through the authorization of a centralized regulatory agency for disability antidiscrimination, the DRC. The UK Government created the DRC because policy actors, including the NDC, advocated for stronger enforcement of the Disability Discrimination Act 1995 (Roll et al., 1999). The UK centralized enforcement capacity and authority within the DRC to remediate the institutional constraints on public sector enforcement.

The DRC's capacity and authority to engage in formal enforcement procedures, and the application of these procedures reduced and avoided the costs of litigation by providing guidance on how to interpret the law. This guidance, including Codes of Practice, reduces the uncertainty of litigation by informing service providers of their obligations and defining those obligations for advocates. The DRC also lowered the expense of legal advocacy by providing legal assistance. These formal enforcement procedures exposed private enterprises to increased legal risks, and motivated compliance efforts based on the risk of litigation (Easton, 2012). The impact on private enterprises illustrates where regulatory institutions influenced policy actors within private enterprises. The increased risk of litigation confronting private enterprises also influenced industry advocates to argue for more efficient compliance mechanisms, which prompted regulatory reform efforts. Industry advocacy efforts, specifically by business and professional associations, demonstrate the influence of policy actors on subsequent regulatory and enforcement institutions.

Establishing the DRC and operating three separate equality and human rights commissions also exposed the UK Government to inefficiencies. These inefficiencies led to

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financial constraints on the UK Treasury, which contributed to the justification for establishing the EHRC (Great Britain Dept. of Trade and Industry & Great Britain Dept. for Constitutional Affairs, 2004). Public sector inefficiencies generated by the combination of a bureaucratic and legalistic approach to disability antidiscrimination led to reform efforts, which attempted to reduce public sector costs for antidiscrimination regulation. These reform efforts illustrate where the institutional arrangement of regulatory agencies influenced the preferences of policy actors, specifically the UK legislature.

The UK legislature reformed the DRC and established the EHRC as the public sector's single point of contact for private sector equality duties. In keeping with principles of efficiency and effectiveness, the EHRC concentrated on strategic, low-cost, and effective enforcement. Following agency reform, a series of national research and consultation processes with interest groups, including industry advocates, promoted a unified approach to antidiscrimination legislation (Keter & Great Britain Parliament House of Commons, 2009). The resulting enactment of the Equality Act 2010 further promoted efficient regulatory oversight at the EHRC.

In response to these changes, policy actors in the UK, including the EHRC, approached enforcement through negotiation and problem-solving among stakeholder coalitions. The EHRC's approach to enforcement required voluntary participation by private enterprises. However, as relevant research had not empirically demonstrated the costs and benefits of web accessibility, private enterprises had little financial incentive to participate. This approach signified a shift in compliance strategy towards an informal approach that focused less on judicial and formal administrative enforcement, and more on informal participatory enforcement. The change in compliance strategy demonstrates where enforcement institutions influenced the actions of policy actors, specifically the approach to compliance by private sector policy actors and the EHRC.

Concurrently with the enactment of the Equality Act 2010, the British Standards Institution published BS 8878. The change to an informal approach to enforcement that came with the Equality Act 2010 supported the voluntary adoption of BS 8878. The approval of BS 8878 by the EHRC and the UK Government provides a regulatory basis, though voluntary, for the adoption of the standard. However, the absence of a regulatory mandate for standards avoids imposing a legal obligation to comply with defined processes or technical specifications. The lack of a clear legal obligation for BS 8878 demonstrates the influence that policy actors within standards organizations and regulatory agencies have on institutional enforcement.

By contrast, Norway presents a less formal and less legalistic regulatory enforcement tradition. Despite fragmented antidiscrimination authority and mandatory prescriptive standards, Norway has also not yet experienced substantial litigation. The authority of public sector officials to control the processes and standards of antidiscrimination policy through the LDO and difi, and the comparatively informal procedures for registering complaints partly explain the absence of judicial advocacy. The Norwegian Government promoted the capacity of the LDO by reinvesting existing budgets and increasing competence in pre-existing institutions (BLID, 2004). While the LDO provided the opportunity for persons with disabilities to register officially recognized complaints against private enterprises on the basis of disability discrimination, the prevailing antidiscrimination legislation at the time did not directly reference disability as a basis for discrimination. Consequently, this limitation constrained the authority of the LDO to issue statements on the application of the law to disability-related complaints.

In response, the Norwegian Government adopted the Antidiscrimination Accessibility Act, which required the UD of ICT. The Antidiscrimination Accessibility Act did not authorize a regulatory agency to oversee paragraph 11, the UD of ICT. The Antidiscrimination Accessibility Act required that the LDO have authority to enforce antidiscrimination regulations on the grounds of disability; however, the competence of the LDO did not include the technical and procedural knowledge required to enforce regulations for the UD of ICT. In response, the Norwegian legislature opted to restrict the enforcement of the Antidiscrimination Accessibility Act (paragraph 11), which constrained the authority of the LDO. This enforcement constraint demonstrates where the policy traditions for regulating antidiscrimination through the LDO, established with the Discrimination Act and perpetuated by the Antidiscrimination Accessibility Act, impacted policy actors such as the LDO and persons with disabilities. This enforcement constraint also led to the proposed FAD regulations, which promoted the competence of difi to regulate the UD of ICT.

Concurrently with the regulatory reforms that established the LDO and the Antidiscrimination Accessibility Act, the Delta Center and difi promoted their competence among service providers. These active promotion efforts established a framework for aligning public and private sector objectives in UD and ICT. Initially, the Norwegian Government authorized difi to consolidate national ICT policy by advising public sector agencies, establishing performance criteria, and promoting the use of the web. The government authorized the Delta Center to promote accessibility and UD. Difi and the Delta Center introduced voluntary policies that, due to the symbolic authority of the agencies, indirectly influenced public and private sector service providers. Specifically, the two agencies established performance criteria that provided a voluntary mechanism for the adoption of, and compliance with, performance standards. These agencies also promoted UD of ICT, which introduced service providers to new investments by encouraging the procurement and development of web-based ICT solutions. Despite a voluntary approach to compliance, these agency efforts provided a basis for the introduction of performance standards. The FAD regulations promoted the institutional competence of difi to regulate the UD of ICT through statutory performance standards. The formation and development of difi and the Delta Center demonstrate where policy actors influenced regulatory enforcement institutions.

CONCLUSION

The legal obligations of performance standards varies between the UK and Norway (i.e., voluntary and statutory respectively). This difference challenges evidence of convergence, as regulatory approaches to web accessibility, while appearing similar, diverge substantively. This article contributes empirical evidence demonstrating that, despite supranational and international influences contributing to convergence, national policy traditions for regulatory enforcement may have a stronger influence on the legal obligations of web accessibility performance standards. These policy traditions interact with the expectations and choices of policy actors involved in legislatures, regulatory agencies, advocacy organizations, standards organizations, and private enterprises. Regulatory agencies influenced the development and institutionalization of both voluntary and statutory standards, and the differences in the authority and capacity of regulatory agencies in the UK and Norway have consequently influenced the legal obligations of the standards.

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In the UK, the regulatory authority and capacity of the EHRC and the formation and implementation of the Equality Act 2010 influenced the legal obligations of BS 8878. The UK Government initiated these regulatory reforms based on the NDC, DRC, and Disability Discrimination Act 1995. In Norway, the regulatory authority and capacity of the LDO, the Delta Center, and difi and the formation and implementation of the Antidiscrimination Accessibility Act influenced the development of the FAD regulations, which legally obligate service providers to comply with international performance standards (WCAG 2.0/ISO/IEC 40500:2012 level A and AA). The Norwegian Government established the LDO based on prior regulatory reforms, while the government established difi and the Delta Center to increase public sector capacity and authority.

The CRPD obligates States Parties to ensure access to the web for persons with disabilities. However, to establish effective national regulatory enforcement mechanisms, policy actors must consider the barriers to web accessibility and how current approaches to antidiscrimination fail to adequately ensure access to ICT for persons with disabilities on an equal basis with others. The results of this study provide a basis for policy actors involved with the national and international development and implementation of performance standards to consider how obstacles related to national regulatory capacity and authority impact the legal obligations of performance standards.

These obstacles also reveal a pertinent and broader question for future research: to what extent can standardization support social regulation? Recommendations provided by the interview participants provide a useful starting point for addressing this question and suggest:

- adopting a partnership approach to achieving web accessibility by including persons with disabilities in the legislative process, in standardization, and in testing or compliance certification;
- integrating policies that provide assistive technology with broad-based antidiscrimination legislation that refer generally to international performance standards;
- implementing these regulations through a centralized agency with the capacity to raise public awareness and the authority to effectively monitor and enforce the law through a low threshold complaint mechanism.

These recommendations provide guidance for governments seeking to ensure the active participation of persons with disabilities in the economic, political, and cultural activities that the information society and global knowledge economy have to offer.

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Paper V

Giannoumis, G. A. (2018). Regulatory Intermediaries: The Role of Interest Organizations in Supporting Web Accessibility Policy Implementation. *Studies in health technology and informatics*, 256, 196-204.



V

Regulatory Intermediaries: The Role of Interest Organizations in Supporting Web Accessibility Policy Implementation

G. Anthony GIANNOUMIS¹

¹*Department of Computer Science, Faculty of Technology, Art and Design, Oslo Metropolitan University*

Abstract. This article explores how interest organizations, including non-profit and commercial service providers, act as intermediaries to support the implementation of regulations for web accessibility. Web accessibility policies promote the usability of web content for persons with disabilities. Previous research on relational regulation has focused on the bidirectional relationship between regulators and private enterprises in managing compliance. However, this research has yet to examine the complex relationships that emerge when interest organizations act as intermediaries between private enterprises and regulators. Previous research demonstrates that intermediaries translate and adjust legal obligations in practice. This article demonstrates that interest organizations in the United Kingdom, United States and Norway translated and adjusted legislation and standards to demonstrate the commercial value of compliance. This article extends previous research by suggesting that interest organizations act as intermediaries to support policy implementation and manage compliance.

Keywords. Web accessibility, disability, compliance, regulation

1. Introduction

In the mid-1990's, an international regulatory regime for web accessibility emerged from national and international disability antidiscrimination laws [1, 2]. Web accessibility policies encourage service providers to create web content usable by persons with disabilities. The United Nations (UN) Convention on the Rights of Persons with Disabilities (CRPD) obligates States Parties to ensure access to information and communication technologies (ICT), including the web, for persons with disabilities [3, 4]. The CRPD does not explicitly define disability. However, the International Classification of Functioning, Disability and Health conceptualizes disability as environmental features that interact with particular impairments to cause 'activity limitations or participation restrictions' [5][6]. Though previous research has analysed disability as a universal experience closely associated with ageing, this article recognizes the relationship between disability and aging while maintaining an analytical distinction between persons with disabilities and older persons [7].

¹ Corresponding Author, G. Anthony Giannoumis, Department of Computer Science, Faculty of Technology, Art and Design, Oslo Metropolitan University, E-mail: gagian@oslomet.no

Complex implementation challenges have limited compliance with web accessibility policies [8][9]. Performance standards have attempted to provide a basis for web accessibility compliance. However, due to the inherent complexity of web accessibility as a policy objective, interest organizations provide services to support policy implementation. Interest organizations attempt to persuade private enterprises to internalize web accessibility norms by promoting the commercial benefits of compliance. Thus, by combining social and commercial objectives interest organizations attempt to reconcile competing discourses for social justice and commercial opportunity.

Previous research on relational regulation has modelled the interdependencies of regulators and private enterprises in policy implementation and managing compliance [10][11][12]. Relational regulation refers to the interactions that occur between State and non-State actors that manage the incongruence between regulatory objectives and practice. Research on relational regulation recognizes the 'impossibility of perfect conformity between abstract rules and situated action'.

However, research on relational regulation has yet to examine the complex role of interest organizations in supporting implementation. This article asks, 'To what extent have interest organizations acted as intermediaries between the interests of regulators and private enterprises?' By analysing the role of interest organizations as intermediaries, this article provides evidence on the commercial incentives that emerged from the relationship between private enterprises and interest organizations. This article examines the juxtaposition of policy objectives and commercial incentives. This article analyses relational regulation by examining the role of interest organizations as non-State actors involved in supporting policy implementation and managing compliance. This article demonstrates that commercial incentives structure the role of interest organizations as intermediaries and the relationship between interest organizations and enterprises.

2. Analytical Framework

Relational regulation attempts to manage compliance by adapting and internalizing legal obligations. Huising and Silbey [12] substantively advanced research on compliance by modelling the interdependencies between regulators and private enterprises. The author refers to the roles and settings that enhance compliance as relational regulation. While the values of enterprises may differ from policy norms or regulatory requirements, the interdependencies between regulators and private enterprises provide an opportunity to resolve compliance conflicts. However, Heimer [13] recognizes that focusing on compliance from a regulatory perspective ignores other institutionalized values. Approaches to relational regulation attempt to manage the incongruence of regulatory objectives and practice by adapting organizational values to internalize legal obligations [13]. Related research by Edelman and Talesh [14] similarly examines compliance as an organizational process. Private enterprises respond to legal ambiguities by constructing the meaning of compliance [14]. Heimer [13] and Huising and Silbey [12] demonstrate that compliance constitutes both a pragmatic and a symbolic commitment to regulatory objectives. The authors also recognize that compliance exists as an iterative, ongoing process. Thus, Heimer [13] demonstrates that relational regulation provides a useful mechanism for achieving compliance.

However, modelling compliance as a simple interaction between regulators and enterprises ignores the network of actors involved in policy implementation. As regulators typically do not provide compliance solutions, interest organizations act as

intermediaries to support implementation. Policy network theorists have recognized the interdependencies among a variety of State and non-State actors [15-19]. Policy networks distort the distinctions between State and non-State actors. Previous research has provided a framework for examining the relationship of policy networks within multiple levels of governance [20]. This multi-level governance framework situates decision-making in a variety of State and non-State settings. The contextual setting structures policy implementation by influencing the options available to non-State actors.

Non-State actors provide semi-professional services to support the implementation of social regulations. Research by Svensson and Åström [21] explores the professionalization of non-State actors as a response to social regulation. The authors argue that policy actors act as semi-professional representatives of the State to implement regulatory objectives. The professionalization of policy actors relates to previous research by [22]. The author demonstrates that legal ambiguities result from the 'abdication' of the State's regulatory role. In response to legal ambiguity, non-State actors support implementation and promote compliance. As regulatory intermediaries, non-State actors use expertise and discretion to translate legal obligations in practice. However, Svensson and Åström [21] distinguish the role of regulatory intermediaries from legal professionals. While legal professionals provide knowledge of legislation, intermediaries provide knowledge on the application of legislation. Mena and Waeger [23] demonstrate further that 'activist groups' aim to use 'workable solutions' to achieve regulatory objectives. Activist groups act as intermediaries by collaborating with private enterprises to ensure compliance. Thus, regulatory intermediaries typically act on legal ambiguity and attempt to reconcile competing discourses for social justice and commercial opportunity.

Previous research on relational regulation has focused on the interdependencies between regulators and private enterprises [13]. However, research on relational regulation has yet to examine the complex relationships inherent in policy networks. This article contributes to research on relational regulation by examining the interdependencies between regulators, private enterprises and intermediaries. The results extend models of relational regulation and demonstrate that interest organizations act as intermediaries to support policy implementation and manage the incongruence between regulatory objectives and practice.

3. Research Design, Methods and Data

Interest organizations in the UK, US and Norway supported the implementation of national and international antidiscrimination legislation and web accessibility standards. In each case, a large interest organization typically influences and provides political and social inspiration for groups of smaller interest organizations.

The UK, US and Norway provide a useful basis for examining the role of interest organizations as intermediaries in policy implementation because the three cases share the same basic political institutions including doctrines related to the rule of law, separation of powers, democratic elections, and protection of human rights. However, the choice of cases demonstrate differing legal cultures, regulatory environments and policy instrumentation. I based the selection on the expectation that the US, UK and Norway would differ, and I used the three cases to replicate and confirm the results by identifying consistencies between the cases.

Web accessibility also provides a useful case for examining relational regulation as complex implementation challenges have limited compliance. Web accessibility policies aim to promote the social inclusion of persons with disabilities on the web. The implementation of web accessibility policies in practice has not reflected the intent of those policies. Performance standards provide a basis for web accessibility compliance. However, standards do not typically provide private enterprises with commercial justifications that encourage compliance. In addition, performance standards have not yet provided a definitive technical or legal solution to compliance [24]. Due to the inherent complexity of web accessibility as a policy objective, interest organizations provide services to support policy implementation.

This article uses qualitative data and analyses to examine the role of interest organizations as intermediaries. This article combines qualitative data from primary source policy documents, including statutory and non-statutory policies, and semi-structured interviews with 25 participants from interest organizations in the UK, US and Norway.

4. Regulating Web Accessibility

US antidiscrimination legislation provided a basis for interest organizations to act as intermediaries. In the US, a legal obligation for web accessibility emerged from the application of the Americans with Disabilities Act 1990 (ADA) to the web. Title III of the ADA prohibits discrimination in places of public accommodation. Under title III, discrimination constitutes a failure to remove barriers when readily achievable. The law contains no further definition of 'readily achievable' and a prescriptive definition of compliance has yet to emerge. Regulatory agencies in the US have supported the implementation of title III by advising public agencies on 'policies, programs, procedures, and practices that enhance equal opportunity' [25]. US regulators have also collaborated with a variety of non-State actors in 'enforcement, certification, regulatory, coordination, and technical assistance activities' [26]. Case law ultimately confirmed the application of the ADA to the web and established an obligation for private enterprises to remove barriers to the web when readily achievable [27]. Nonetheless, case law and regulations for web accessibility have yet to provide a pragmatic threshold for compliance. Thus, legal ambiguities provided a market opportunity for interest organizations to support the implementation of the ADA. In the absence of public sector clarification of regulatory requirements, interest organizations offered commercial services to assess compliance with international standards for web accessibility and implement procedures to enhance ongoing compliance.

UK antidiscrimination legislation also provided a basis for interest organizations to act as intermediaries. The introduction of the ADA in the US influenced the Disability Discrimination Act 1995 (DDA) and subsequently the Equality Act 2010 in the UK [28]. The Equality Act 2010 requires reasonable adjustment of services. The Equality Act 2010 obligates service providers to 'take positive steps to ensure that disabled people can access services' [29]. Regulatory agencies in the UK supported the implementation of the DDA and the Equality Act 2010 by providing a variety of services including 'information and advice' to 'protect, enforce and promote equality' [30, 31]. Subsequent regulations clarified the application of reasonable adjustment to the web [29, 32]. However, the UK government has yet to legislate a prescriptive definition of reasonable accommodation when applied to the web. UK regulators attempted to promote voluntary

compliance through the development of procedural standards [33]. These voluntary standards established processes for applying international performance standards. Thus, the approach to web accessibility in the UK, through regulation and standardisation, differs from the approach in the US, through case law. However, despite efforts to clarify the law, legal ambiguities provided a market opportunity for interest organizations to support the application of web accessibility policies. Similar to the US, in the absence of regulatory clarification, interest organizations offered services to assess and enhance compliance.

Norwegian antidiscrimination legislation also provided a basis for interest organizations to act as intermediaries. The legislative basis of web accessibility in Norway originates with the Antidiscrimination Accessibility Act (2008), which requires universal design of ICT [34]. However, despite a universal design approach to antidiscrimination legislation, subsequent regulations require publicly available websites to adhere to international web accessibility standards [35]. The Norwegian government established a legal obligation for web accessibility through legislation and regulation and defined compliance using mandatory standards. By mandating standards for web accessibility, the Norwegian government attempted to minimize legal ambiguity. Thus, the efforts to define regulatory requirements differentiate the approach in Norway from the UK and US. In addition, regulatory agencies in Norway have provided guidance, counselling and other services aimed at supporting the implementation of web accessibility policies [36, 37]. However, as in the UK and US, interest organizations emerged as commercial service providers to assess and enhance compliance.

5. Supporting Policy Implementation

Interest organizations in the UK, US and Norway supported the implementation of disability antidiscrimination laws and web accessibility standards by acting as an intermediary between regulators and enterprises. Interest organizations involve persons with disabilities in interactions with enterprises to communicate personal experiences, provide expertise and enhance credibility. Interview participants in all three cases confirmed the role of interest organizations as intermediaries. Several participants described the interactions between interest organizations and private enterprises. A US participant summarizes these interactions stating, interest organizations 'guide' companies and 'address accessibility in the context of a [company]'. By informing enterprises on the implementation of web accessibility policies, interest organizations assume strategic positions within an enterprise. A UK participant discusses the position of interest organizations within an enterprise stating, 'We do development and innovation work with companies to try and make their products better and more accessible or invent new ones'. By supporting policy implementation, interest organizations can contribute to the design of accessible products and services. A UK participant also discussed the variety of functions interest organizations adopt stating, '[interest organizations] train their [enterprise] staff ... inspire their staff, and ... actually help them do the hard coding'. By providing a variety of services, interest organizations simultaneously facilitate and encourage compliance. Services vary based on the competencies in the enterprise and the enterprise's receptivity to web accessibility. Thus, acting as an intermediary involves professional competences that extend beyond interest advocacy.

Cooperation with enterprises requires interest organizations to juxtapose regulatory and commercial objectives. Several participants discussed the duality of simultaneously providing technological expertise and promoting accessibility. A US participant describes the role of interest organizations as 'straddling the line all the time of playing many different roles'. As the participant describes, 'straddling the line' refers to acting as an 'advocate' and an 'empowered technologist'. Thus, the role requires the ability to communicate complex regulations and technical standards to private enterprises. A Norwegian participant discusses the roles of interest organizations further, stating, 'You have many different ways of working as a representative for a disability organization. But if you're going to get producers to make ... accessible [technology] or work with standards ... it's a very different way of working'. The participant characterizes the 'different way of working' by stating, 'you have to speak the same language as them and that's money ... social responsibility is not that big [of an] issue'. Thus, interest organizations act as intermediaries by connecting legal obligations with incentives for compliance.

Commercial incentives structure the relations of enterprises and interest organizations. Several participants discussed the commercial opportunities that incentivize interest organizations to engage with intermediaries. A Norwegian participant presented the commercial opportunity for web accessibility stating, 'some [private enterprises] would hire some consultancy firm to tell them ... how they can implement [standards] on their particular products or services ... it's mainly a matter of how to understand them [standards] and implement them'. A UK participant further demonstrates the commercial opportunities that supported the role of interest organizations as intermediaries.

companies obviously knew they could read all these guidelines, could get them for free but if you really want to do it, your team needs to implement it and they were prepared to pay for someone to tell them how to make their particular website accessible.

Thus, a legal obligation for web accessibility provided a commercial incentive for interest organizations to act as intermediaries and cooperate with enterprises.

Commercial incentives structure the relations of interest organizations and private enterprises by promoting cooperation and avoiding enforcement. However, interest organizations, acting as intermediaries, must resolve the inherent tensions between the interests of regulators and enterprises. Interest organizations support policy implementation by providing semi-professional services as subject matter experts and inform the application of the law by responding to commercial opportunities and engaging with enterprises. Interest organizations support voluntary compliance as an alternative to enforcement. A UK participant describes the approach to compliance stating, interest organizations attempt to 'solve the problems before it ever gets to court'. Thus, interest organizations operate interdependently with private enterprises in the juxtaposition between regulatory and commercial interests. This section has demonstrated that interest organizations in the UK, US and Norway act as intermediaries by providing commercial services as web accessibility professionals.

6. Conclusion

This article has demonstrated that interest organizations act as regulatory intermediaries to support implementation and manage compliance. This article provides empirical evidence on the role of interest organizations as intermediaries in relational regulation. This article contributes to research on relational regulation by extending models of compliance beyond the bidirectional association between regulators and private enterprises. This article provides a model for compliance based on the role of interest organizations acting as intermediaries to support policy implementation. In addition, interest organizations responded to commercial opportunities to cooperate with enterprises and used commercial incentives to promote compliance. Thus, this article demonstrated that commercial incentives pervade the implementation of web accessibility policies and provide a useful opportunity to expand models of relational regulation.

The results of this article provide a useful basis for regulators to use commercial incentives to promote compliance. Interest organizations emerged in all three cases, the UK, US and Norway. The results suggest that social regulations provide commercial opportunities for interest organizations to act as intermediaries. However, regulators and interest organizations may have an interest in developing and managing commercial incentives. Thus, this article recommends that regulators anticipate potential commercial incentives that emerge from regulatory obligations and actively utilize those incentives in policy design and implementation. Further, the results suggest that commercial incentives influence the role of interest organizations as intermediaries. This article recommends that interest organizations cooperate nationally and internationally to establish a professional association that can promote rules and guidelines for supporting the implementation of web accessibility policies.

Finally, this article provides a useful basis for future research on relational regulation. Research on relational regulation has emphasized the situated demands of compliance and attempted to reshape scientific inquiry by focusing on the incongruence between regulatory objectives and practice. The role of regulatory intermediaries relates to the regulatory regime and the compliance setting. This article demonstrates that the regulatory regime and the compliance setting both involved commercial incentives. Thus, this article suggests that future research investigate different regulatory regimes and examine how changes in commercial incentives affect levels of compliance.

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Paper VI

Giannoumis, G. A. (2015). "Auditing Web accessibility: The role of interest organizations in promoting compliance through certification." *First Monday* 20(9).



Auditing Web accessibility: The role of interest organizations in promoting compliance through certification

by G. Anthony Giannoumis

Abstract

Previous research on Web accessibility policy has focused on the application of anti-discrimination policies to the Web and has yet to explore fully, the mediators to policy implementation and compliance. Policy analyses and semi-structured interviews with 34 participants in the United Kingdom and United States demonstrate that interest organizations, including non-profit and for-profit organizations, support the implementation of anti-discrimination policies by providing audit and certification services. First, performance certification demonstrates the quality of a Web site, and interest organizations have developed certification initiatives based on international performance standards developed by the private sector. Second, professional certification demonstrates the quality of an individual's knowledge and experience, yet despite the absence of educational standards, interest organizations offer professional certification. Third, procedural certification demonstrates the quality of organizational processes, yet despite the development of a national procedural standard, interest organizations do not offer procedural certification. This paper concludes by offering recommendations for enhancing the use of certification to achieve Web accessibility and provides suggestions for future research.

Contents

1. Introduction
2. Regulatory governance through policy networks and voluntary compliance
3. Methodology, data and analysis
4. Regulating Web accessibility in the U.K. and U.S.
5. Interest organizations as intermediaries
6. Auditing Web accessibility as the basis for certifying performance and profession
7. Barriers to achieving compliance through certification
8. Developing Web accessibility procedural standards into an opportunity for certification
9. Certification as a mechanism for achieving compliance
10. Conclusion and recommendations

1. Introduction

National and international antidiscrimination laws obligate governments and businesses to ensure the accessibility of information and communication technology, including the Web (Blanck, 2014a; U.K. Equality and Human Rights Commission (EHRC), 2011; United Nations, 2006). Web accessibility refers to the design of Web content for use by disabled people.

Previous research on Web accessibility policies focused primarily on the legal aspects of applying anti-discrimination legislation to the Web (Blanck, 2008, 2014a, 2014b; Easton, 2012; Leblais, 2009; Lynch, 2004; Noble, 2002; Schaefer, 2003). First, previous research has focused on the application of antidiscrimination laws in the United Kingdom (U.K.) and the United States (U.S.) and second, previous research has focused on the realization of the rights enumerated in the United Nations (U.N.) Convention on the Rights of Persons with Disabilities (CRPD).

The application of antidiscrimination legislation to the Web involves implementing reasonable accommodation provisions (Easton, 2011). The CRPD provides a useful definition of reasonable accommodation, stating "reasonable accommodation means necessary and appropriate modification and adjustments ... to ensure to persons with disabilities the enjoyment ... of all human rights and fundamental freedoms" (United Nations, 2006).

Previous research has also begun to investigate the implementation of Web accessibility policies

(Easton, 2011, 2013; Giannoumis, 2014a; Jaeger, 2008; Olalere and Lazar, 2011; Wentz, *et al.*, 2011; Yu, 2002). This research has typically focused on compliance related outcomes and barriers, and approaches to the use of standards. However, research in other areas of regulation demonstrates that certification acts as a mechanism of compliance (Bartley, 2011; Courville, 2003; Haufler, 2003; Vogel, 2008).

Web accessibility certification emerged in the U.K. and U.S. through interest organizations. Interest organizations refer to a range of civil society organizations involved in Web accessibility. Advocates, commercial testing enterprises and subject matter experts act as interest organizations in the U.S. and U.K. Thus, the U.K. and U.S. provide useful cases for examining certification as a mechanism of regulatory compliance.

Certification has emerged in the U.K. and U.S. as an unregulated service. Interest organizations offer performance certification based on international standards to demonstrate the accessibility of Web content. Interest organizations also offer professional certification to demonstrate the knowledge and experience of an individual; however, educational standards have yet to emerge. While procedural standards for Web accessibility exist, interest organizations have yet to pursue procedural certification.

This paper explores the role of interest organizations in promoting compliance through certification. We ask, "Under which conditions can voluntary certification initiatives support regulatory compliance?" We demonstrate that interest organizations offer audit services to assess and monitor compliance. These audit services involve certification initiatives that aim to promote accountability and transparency. Audit and certification supports accountability and transparency by assessing and providing demonstrable evidence of compliance efforts.

2. Regulatory governance through policy networks and voluntary compliance

Governments have used social regulations to encourage businesses to act socially responsible. Previous research has demonstrated a trend where governments try to regulate businesses by promoting cooperation between regulators and businesses and providing guidance (Levi-Faur, 2005). Cooperation aims to incentivize compliance by encouraging voluntary agreements and compromises (Potoski and Prakash, 2011). Thus, research demonstrates that approaches to regulation have changed from government rule-making and enforcement to voluntary cooperation (Töller, 2011).

Previous research differentiates voluntary approaches to regulation based on business performance or procedure. Performance regulations focus on outcomes, and businesses typically decide on how to achieve the outcomes (May, 2011). Alternatively, procedural regulations focus on processes, and businesses typically decide on how to design, evaluate and adjust processes (Gilad, 2010, 2011).

However, research demonstrates that regulation does not simply constitute unilateral action by the government (Levi-Faur, 2011, 2013). Instead, government agencies, businesses and interest organizations depend on one another to implement regulations effectively (Adam and Kriesi, 2007; Ayres and Braithwaite, 1992). Previous research refers to the participation of businesses and interest organizations in enforcing regulations as co-regulation (Levi-Faur, 2011).

In addition, previous research on regulatory enforcement demonstrates that customizing penalties can encourage compliance (Ayres and Braithwaite, 1992). Research on regulatory enforcement illustrates how a range of enforcement options provides a flexible basis for achieving compliance. By increasing the range of enforcement options, regulators can respond to situational demands and promote compliance.

Auditing can support regulation by assessing whether a business has complied with a law or policy. Thus, regulations provide a basis for audit activities. Previous research has adopted a variety of definitions of auditing as a practice, though auditing may refer broadly to assessments that verify whether a business has followed the law or policy (Power, 1997).

Auditing holds businesses accountable by encouraging businesses to openly provide information about socially responsible practices (Courville, 2003; Walker, 2014). However, auditing consists of more than "tests and evidence gathering" and includes "a system of values and goals" (Power, 1997). Thus, auditors act to "connect internal organizational arrangements to public ideals" (Power, 1997).

Research has demonstrated that, under certain conditions, a demand for auditing can emerge when governments do not take responsibility to provide support and guidance for regulations (Grabosky, 1995; Power, 1997). Research has also demonstrated that the lack of support and guidance can lead some organizations or individuals to establish a new profession (Svensson and Åström, 2013). Thus, auditors may act as independent professional advisors and report on activities that support regulatory objectives.

Auditing typically involves certification to publicly demonstrate compliance (Bartley, 2011). As

Brunsson and Bengt (2000) describe, businesses obtain certification to "show that we are doing what we say we are". Thus, certification publicly demonstrates compliance efforts.

Certification promotes accountability and transparency by providing evidence of compliance. Certification provides an incentive for businesses to comply with regulations by enhancing public relations and providing an opportunity for businesses and interest organizations to cooperate (Owen, *et al.*, 2000; Vogel, 2008).

For example, Vogel (2008) provides a review of previous research on private global business regulation. The author examined research on certification in labor practices, environmental quality, and human rights conditions. According to the author, "certification benefits firms that sell to consumers by improving their reputations". Vogel further states, "negotiations among businesses ... national governments, NGOs, and/or trade unions ... typically incorporate global product and producer certifications."

Standards typically provide an independent and objective basis for certification and thus, certification can promote the dissemination of standards (Courville, 2003; Haufler, 2003). Standards refer to "technical rules concerning either the design of key attributes or components of a product or crucial elements of processes of production, operation or technology use" (Werle, 2002).

For example, Courville (2003) examined certification initiatives for fair trade standards for consumer products and corporate social responsibility. According to the author, "certification systems have definitive standards, usually based on widely accepted sets of principles".

Consequently, certification also indirectly contributes to compliance as the dissemination of standards can encourage businesses to comply with a standard whether or not the business also becomes certified (Hallström, 2004). Certification initiatives vary depending on whether certification applies to individuals or organizations.

For example, professional certification typically requires evidence of education or training and applies to an individual, while performance or procedural certification typically requires evidence of outcomes or processes, respectively, and applies to an organization (Bartley, 2011; Garoupa, 2011).

However, limited research exists examining the use of certification by interest organizations. While previous research has examined the use of auditing and certification to support the implementation of social regulations and achieving compliance, limited research exists examining the role of interest organizations and the conditions under which voluntary certification can support compliance.

This paper aims to extend previous research by first, examining the role of interest organizations as intermediaries between the interests of regulators and businesses and second, analyzing the use of voluntary certification initiatives to support compliance with Web accessibility policies. We argue that interest organizations act as intermediaries by using both adversarial and cooperative approaches to achieving compliance.

Interest organizations have used litigation and legal threats to coerce businesses to comply with antidiscrimination regulations and have used audit and certification to encourage businesses to comply voluntarily with Web accessibility policies. Thus, audit and certification initiatives provide a useful mechanism for compliance as certification extends enforcement options beyond adversarial enforcement.

3. Methodology, data and analysis

To examine how interest organizations have used certification to support compliance, I conducted a case study of the U.K. and U.S. Case studies provide useful evidence for elaborating governance models — in this paper, the use of certification to support social regulations (Yin, 2013). This article uses the U.K. and U.S. to elaborate on the role of certification as a component of Web accessibility policy and as a mechanism for regulatory compliance.

Previous research demonstrates that case studies provide a useful approach for examining a current phenomenon in context, where investigators have limited to no control over events (Yin, 2013). The lack of control over events differentiates the use of case studies from experimental research. George and Bennett (2005) describe case studies as an "instance [case] of a class of events [phenomenon]".

Yin (2013) provides a more detailed description of case studies as empirical inquiries that "investigate a contemporary phenomenon in-depth and within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident". Thus, case studies provide a holistic examination of the meaningful characteristics of real-life events and provide a useful research design for understanding complex social phenomena (Yin, 2013).

Case studies provide detailed explanations of the processes that cause a particular phenomenon (Boix and Stokes, 2007; George and Bennett, 2005). By detailing causal processes, case studies can identify new variables and hypotheses (George and Bennett, 2005; Mitchell, 1983). The results of case studies allow investigators to expand and generalize theories (Boix and Stokes, 2007; George and Bennett, 2005; Mitchell, 1983; Yin, 2013). Thus, rather than generalizing statistically by "enumerating frequencies", case studies generalize to "theoretical propositions" (Yin, 2013).

Case studies aim to inform theory and models of policy implementation by evaluating theoretical assumptions and extending models of policy implementation by identifying new causal conditions and areas of exploration. Thus, this article aims to contribute recommendations on the use of certification initiatives to enhance Web accessibility.

I selected the U.K. and U.S. as similar cases since both governments have adopted comparable approaches to Web accessibility. Both cases have 1) approached Web accessibility through the application of antidiscrimination legislation; 2) supported the development of voluntary standards; and, 3) demonstrated that a lack of Web accessibility violates the rights of disabled people. In addition, interest organizations in the U.K. and U.S. act as commercial service providers and certify compliance with Web accessibility policies.

While a single case study of the U.K. could provide a useful analysis, the addition of the U.S. provides an opportunity to identify consistencies across the cases and enhance my ability to elaborate on the role of certification. Thus, as similar cases, the results from the U.K. can confirm similar outcomes in the U.S.

To understand the extent that interest organizations have used certification to support compliance, I conducted policy analyses and semi-structured interviews. Policy analyses provided useful data on the explicit norms, values and procedures involved in Web accessibility. I selected policy documents systematically based on search criteria including Web accessibility and related concepts such as ICT accessibility and usability.

As I located useful documents, I searched within the document for potentially useful references and developed the search criteria further. The document data collection aimed to include all documents with direct relevance to web accessibility supranationally (e.g., documents from the European Union, United Nations and World Wide Web Consortium) and nationally from the U.K. and U.S. In sum, I analyzed 281 policy documents including 72 from the U.K., 65 from the U.S. and 144 from supranational sources.

The policy analysis focused on primary source policies including national and international laws and policies, regulations, standards, policy proposals, and government reports and communications. I located these policies via Web searches, through referrals and through organizational or governmental public Web sites.

However, many policies and Web sites referred to defunct Web content. Organizations often change content locations, remove or overwrite Web content resulting in unavailable content. I accessed defunct Web content through the Internet Archive (2013). The policy analyses provided a basis for conducting the semi-structured interviews.

Semi-structured interviews provide useful data on the perspectives of policy actors involved in Web accessibility. I conducted 34 interviews with policy actors representing public agencies, regulatory agencies, interest organizations, standards organizations, and businesses. I recruited participants with knowledge and expertise on Web accessibility.

The interviews covered a broad range of questions related to accessible information and communication technology and the relationships among policy actors. Interview questions also focused specifically on the role of standards and certification.

I used different forms of thematic analysis to examine data from the policy documents, interview transcripts and field memos. I used "coding" to identify consistent themes across the different data sources (Weiss, 1994). Coding requires researchers to immerse themselves in the texts by reading, re-reading and identifying text segments that relate to specific concepts.

I also used content analysis to examine the competing interests between policy actors. Content analysis provides a range of techniques for analyzing text-based data, and acts as a particularly useful approach for examining the interests of different groups of policy actors expressed in formal and informal communications (Creswell, 2007).

The content analysis focused on the conflicts among policy actors, and I used the interests of policy actors to examine the historical and social context for policy actions and social problems. The content analysis provided a useful approach for examining the aims and strategies of different policy actors involved in Web accessibility and determining whether the interests of policy actors provided a basis for cooperation or conflict. I also used the content analysis to examine the legal, commercial and social interests of different policy actors.

4. Regulating Web accessibility in the U.K. and U.S.

Based on the coding and content analysis of the data, four themes emerged. First, Web accessibility policies in the U.K. and U.S. have adopted a regulatory approach to encouraging businesses to provide accessible ICT goods and services. Second, interest organizations in the U.K. and U.S. have supported the implementation of Web accessibility policies by acting as intermediaries. Third, interest organizations have introduced auditing as a means for certification. Fourth, barriers to certification have limited compliance. Sections 4 to 7 detail the results of the four themes.

Disability anti-discrimination regulations in the U.K. and U.S. attempted to encourage businesses to accommodate disabled people by adjusting business policies or practices. However, the application of anti-discrimination laws to the introduction of new technologies, such as the Web, prompted legal clarification. Anti-discrimination laws in the U.K. and U.S. do not require compliance with Web accessibility standards. Thus, the U.K. and U.S. governments have allowed discretion in how market actors achieve Web accessibility.

The U.K. and U.S. governments both established independent regulatory agencies to support the implementation of Web accessibility policies. U.K. regulators adopted voluntary guidelines and cooperative approaches to promoting Web accessibility and clarified the application of anti-discrimination law to the Web through mandatory regulations (U.K. Disability Rights Commission (DRC), 2002; U.K. Equality and Human Rights Commission (EHRC), 2011; Giannoumis, 2014a, 2014b). While Web accessibility regulations in the U.K. preserve the intent of the law, the requirements for compliance remain undefined.

U.S. regulators adopted a more adversarial and legalistic approach to promoting Web accessibility (Kagan, 2001). The U.S. Department of Justice has supported the application of anti-discrimination laws to the Web in judicial enforcement. For example, the Department of Justice has filed statements of interest in court cases on Web accessibility stating, "a business providing services solely over the Internet is subject to the ADA's prohibition on discrimination" (U.S. Department of Justice, 2012). Subsequent court cases have further clarified the application of anti-discrimination law to the Web (Blanck, 2014a). However, similar to the U.K., the prescriptive requirements of the law remain undefined.

Both the U.K. and U.S. advanced Web accessibility by establishing standards (BSI Group, 2010; World Wide Web Consortium, 1999b). The U.S. government supported the creation of an international standards organization, the World Wide Web Consortium (W3C) and contributed to the development of an international performance standard, the Web Content Accessibility Guidelines (WCAG) (Vanderheiden, *et al.*, 1997; World Wide Web Consortium, 1998, 1999a).

As a membership organization, the W3C established the Web Accessibility Initiative (WAI) to develop "strategies, guidelines, resources to make the Web accessible to people with disabilities" (Web Accessibility Initiative, 2012). The WAI aims to ensure "broad community input" and "encourage consensus" (Web Accessibility Initiative, 2008). The development of WCAG involved a broad range of policy actors including interest organizations and businesses. The WAI developed WCAG as an international performance standard.

Subsequently, the U.K. government contributed to the development of a national procedural standard, British Standard 8878:2010 (BS 8878) (BSI Group, 2006, 2010). U.K. regulators engaged the British Standards Institution (BSI) to develop "Publicly Available Specification (PAS) 78:2006 Guide to good practice in commissioning accessible Web sites" (BSI Group, 2006). PAS 78 formed the basis for BS 8878 as a national procedural standard. BSI has institutionalized the participation of interest organizations and consensus procedures in standardization (BSI Group, 2011, 2012a, 2012b).

While both the W3C and BSI have produced standards for Web accessibility, organizational responsibility and procedures differ. The W3C acts as a private sector standards organization that produces international standards for the Web. External organizations including businesses, government agencies, and universities act as members of the W3C and collaborate with subject matter experts in standardization activities.

Alternatively, the BSI acts as the national standards body of the U.K. and represents the U.K. in European and international standardization activities. External members and subject matter experts commissioned by the BSI contribute to standardization in a wide array of areas including ICT, environmental management, occupational health and safety, information security and energy management.



5. Interest organizations as intermediaries

Regulating Web accessibility primarily involves the relationship between the government and businesses. Conflict emerged between businesses and regulators based on the perceived financial costs and lack of commercial benefits for Web accessibility. According to the director of a U.S. interest organization, "What companies want to see is, where's the money in it? Can you

show me, if I do the right thing, I'm going to be rewarded?" (ID 10).

Businesses encountered incentives to ignore Web accessibility obligations or to adopt compliance symbolically. According to the same participant "they [businesses] want to make money and not do social service" (ID 10). A manager of a U.K. interest organization further stated:

I think they [businesses] borrow all the aspirational talk from us ... they love starting their presentation with Adobe believes or Microsoft believes, they love this stuff because it's very inspiring, but with commercial companies, you have to actually say, 'Microsoft has done', 'Adobe has done', now what they've done up until now ... is a lot of talk, a lot of marketing, a lot of reassurance. (ID 04)

Interest organizations acted as intermediaries between regulators and businesses to promote compliance. Interest organizations include a variety of actors engaged in promoting Web accessibility such as non-profit organizations, businesses, "business-like" non-profit organizations and business subsidiaries of non-profit organizations (Sanders and McClellan, 2014). Disabled people's organizations (DPO) also act as interest organizations led and operated by disabled people.

According to a specialist at a U.S. interest organization, interest organizations "guide" businesses and "address accessibility in the context of a [business]" (ID 05). The participant argued that interest organizations support the implementation of Web accessibility policies by cooperating with businesses.

Interest organizations have pursued litigation to enforce anti-discrimination regulations broadly and Web accessibility policies specifically (Royal National Institute of Blind People (RNIB), 2012). While litigation provides a useful basis for enforcing compliance, judicial enforcement can only promote accountability in individual cases.

To promote broader compliance, interest organizations have used threats of litigation to demonstrate the legal risks of noncompliance (Kagan, 2001; Royal National Institute of Blind People, 2012). According to a U.S. participant, "most changes, a lot of times, are done out of lawsuits or the threat of lawsuits ... it'd be great to get to a place where you don't have to threaten to sue somebody to get them to change" (6204 US). Thus, judicial enforcement produced conflict between interest organizations and businesses.

Reducing legal risk incentivizes accessibility compliance by protecting businesses against the legal costs of litigation and potential further costs of punitive compensation. Businesses have defended against legal enforcement by symbolically pursuing compliance.

A U.S. participant noted the following on the use of symbolic compliance to avoid litigation:

There's some great case studies of companies that screw up and that fix it well. ... and the company ... handled it beautifully, admitted the mistake, immediately responded, didn't try to cover up, and companies that don't do that ... they damage their reputation, so ... call it symbolic action. (0459 US)

The participant detailed "symbolic action" further stating, "you could really have done a nice job, you could even have said you'll work on it and it might take five years. It doesn't really cost you anything" (0459 US).

However, the use of litigation and legal threats emphasizes interest organization's knowledge and experience in Web accessibility. Consequently, an adversarial and legalistic approach to enforcement extends the role of interest organizations by recognizing interest organizations as authorities on Web accessibility.

To support the implementation and enforcement of Web accessibility policies, interest organizations in the U.K. and U.S. offer audit and certification services. Interest organizations offer semi-professional services for assessing compliance, and operate as independent advisors to verify compliance. As the U.K. and U.S. governments have not regulated accessibility certification, approaches to certification vary.

6. Auditing Web accessibility as the basis for certifying performance and profession

Interest organizations involve disabled people in auditing compliance. Web accessibility policies established a commercial opportunity for interest organizations to audit compliance, and interest organizations responded by offering audits as a commercial service. Interest organizations in the U.K. and U.S. involve the active participation and leadership of disabled people in auditing.

Involving disabled people enhances the validity and comprehensiveness of accessibility audits.

The department head of a U.K. interest organization described the role of disabled people in auditing by reflecting, "We've got disabled people working with us in our auditing and user testing processes and stuff. So we're kind of a coalface organization" (ID 01). Interest organizations involve disabled people to support policy implementation and enhance the value of audit services.

Interest organizations in the U.K. and U.S. have integrated monitoring with auditing services. The director of a U.K. public agency describes, auditing involves "monitoring breaches across the industry" (ID 02). Interest organizations monitor Web sites to promote compliance. The managing director of a U.K. interest organization mentioned monitoring in practice:

they [the business] have to then have it [the Web site] reviewed and maintained ... the challenge, of course, with anything is ... the next day they could post something that ... violates it. We offer a service where we just regularly look at their sites and say, you know, "You just need to be aware of this." (ID 03)

Interest organizations provide audit services on a commercial basis. Auditing involves collaboration with businesses to assess compliance, identify and remediate noncompliant content, and lead and train personnel. A manager at a U.K. interest organization discussed the different procedures involved in commercial service auditing:

[we provide] Web audit services, where you can audit your Web site, tell you where they're spotting problems and things that would be barriers. And then ... train their staff ... inspire their staff, and ... actually help them do the hard coding. (ID 04)

The participant argued that auditing provides a range of opportunities to enhance compliance including assessing performance, educating and training individuals, and implementing procedures. Assessing performance attempts to identify and remediate noncompliant Web content. Education and training individuals embed accessibility competence within an organization, and implement procedures attempts to integrate accessibility into corporate practices.

6.1. Performance certification: Establishing accessible Web content

Interest organizations provide performance certification to support compliance with Web accessibility policies. Performance certification emerged in both the U.K. and U.S. as a component of auditing. While auditing includes assessing the accessibility of Web content, performance certification aims to demonstrate the accessibility of a business's Web content publicly.

Interest organizations, typically involved in assessing the accessibility of Web content, established several different performance certification initiatives. Thus, no centralized national or international performance certification exists.

Performance certification involves compliance with international performance standards. A specialist at a U.S. interest organization reflected on the role of performance standards in certification by stating, "we certify to ... WCAG ... which is sort of the industry standard at the moment" (ID 05). Thus, performance standards provide a basis for remediating inaccessible Web content.

Performance certification involves interactive exchanges with businesses through manual and automated assessments. A specialist at a U.S. interest organization discussed the certification process:

we do an assessment of their site ... we'll report back to them and that report is both an automated and a manual report ... we have a tool that we use to do automated testing ... run through common scenarios ... then we feed that information back to the organization ... we go back and forth like that usually two or three times, and at that point, they should be ready for certification, that process takes anywhere from six months, eight months, nine months. (ID 05)

In conclusion, performance certification supports compliance by 1) assessing accessibility outcomes; 2) remediating inaccessible content; 3) supporting the adoption of performance standards; and, 4) publicly demonstrating the quality of a business's Web content.

6.2. Professional certification: Embedding accessibility competencies

Interest organizations provide professional certification to support compliance with Web accessibility policies. Professional certification emerged in both the U.K. and U.S. as a component of auditing. While auditing includes educating and training individuals, professional certification aims to demonstrate the competencies of the individual publicly. A specialist at a U.S. interest organization pointed out the benefits of professional certification by noting, "The easier it is for a company to spot, a bona fide accessibility expert, the easier it is for them to higher that expert"

(ID 05).

Partnerships between interest organizations, professional associations and businesses established several different performance certification initiatives. The department head of a U.K. interest organization discussed a certification initiative by stating, "Basically, any employer, anyone who wants to know that their employees, anyone creating content, is able to appreciate the basics of accessibility, then they would take this online course" (ID 01).

A director at a U.S. interest organization observed on another certification initiative, remarked that "there is an initiative among large IT vendors especially Microsoft, IBM and others who are interested to promote the creation of an association of official organizations for accessibility professionals that have a certification program" (ID 07). Thus, no centralized national or international professional certification exists.

As educational standards for Web accessibility have yet to emerge, professional certification involves compliance with rules and norms established by certification partners. Professional certification provides a basis to support the professional development of the individual. The director of a U.K. public agency remarked on certification as professional development: "We have an eLearning module for Web developers, they can take an accredited course on how to make their Web sites more accessible" (ID 02). Thus, professional certification involves interactions with businesses through education and training.

In conclusion, professional certification supports compliance by 1) assessing an individual's competence; 2) educating and training an individual to create accessible Web content; 3) supporting the adoption of rules and norms of accessibility education; and, 4) publicly demonstrating the quality of an individual's knowledge and experience.

7. Barriers to achieving compliance through certification

Despite the introduction of certification initiatives in the U.K. and U.S., barriers to certification have limited compliance outcomes. The principal barriers to promoting performance and professional certification include the lack of regulatory guidance and lack of educational standards and opportunities.

7.1. Lack of regulatory guidance

A lack of regulatory guidance has limited the compliance outcomes for performance certification. The U.K. and U.S. governments have not intervened to mandate, incentivize or promote Web accessibility certification.

Nonetheless, interest organizations have used legal compliance to promote performance certification. A director from a U.S. interest organization noted certification as a form of legal compliance stating, "[mandatory] certification doesn't exist right now ... problem is, there are so many companies who provide accessibility services and ... they have the guts to charge money for something that doesn't exist" (ID 10).

Since the U.K. and U.S. governments have not provided or endorsed a certification initiative, interest organizations offer multiple competing certifications. The sole proprietor of a U.K. interest organization described the negative impacts of competition in providing performance certification by stating, "what you're ending up with is all these varying quality third party organizations coming in, doing a bit of testing on a Web site and saying, 'yea you're compliant mate, you're fine'" (ID 08).

However, a U.K. participant reviewed the role of contractual agreements in managing claims of legal compliance and the varying quality of certification initiatives:

We already have processes in place for suppliers and manufacturers who make a false declaration ... if something says it's conforming to ... technical requirements and ... they don't meet those requirements, there are processes for dealing with that, those same processes can be used in accessibility, if a customer asks somebody to develop something ... and meet these accessibility requirements. The supplier develops it, declares it's built to conform to those requirements ... If they find ... it doesn't meet accessibility requirements ... it's a ... breach of contract, and that's business as usual. (2618 UK)

The participant argued that businesses typically contract interest organizations to develop accessible Web content and contractual obligations provide a useful mechanism for enforcing the quality of accessibility services. However, regulatory guidance could provide an additional means for promoting accountability of both businesses, through certification, and interest organizations, through quality assurance.

7.2. Lack of educational standards and opportunities

A lack of educational standards and opportunities has limited the compliance outcomes of professional certification. Nonetheless, interest organizations have introduced professional certification based on accessibility norms.

The lack of an educational standard has led to varying quality of training. A vice president from a U.S. interest organization remarked on the quality of professional certification initiatives:

This is what happens a lot in these 'quote', 'unquote', certification, licensure type deals, give us \$3,000 and we'll hand you a piece of paper, not take this class and really show you know how to do what you're doing ... nobody's monitoring that, you're not learning anything really. (ID 09)

Thus, an educational standard could provide a useful means to assess independently, the quality of professional certification initiatives.

A specialist at a US interest organization noted the lack of an educational standard and the quality of professional certification:

We're seeing some universities offering more accessibility courses, but there's not really a single place where you can go and just get a certification, and be confident that you're going to get somebody out of that system that's really going to understand what they're doing. (ID 05)

An educational standard could provide a basis for professional certification and promote opportunities for accessibility education. A director at a U.K. interest organization discussed accessibility in higher education stating, "awareness needs to be raised during professional education, in other words undergraduate courses for engineers, programmers, anybody that can foreseeably be involved in user interface or developing ... technology" (ID 06).

However, a coordinator from a U.S. public agency suggested that the lack of accessibility in education results from the lack of market demand. The participant stated "There'll be a demand for accessibility education when the marketplace demands accessibility, it's a little bit of the chicken and the egg" (ID 11). Thus, the lack of "marketplace demands" influences the dissemination of accessibility norms.

The lack of educational standards provides a barrier to assessing an individual's competence, and the lack of educational opportunities limits education and training for creating accessible Web content. Consequently, barriers to certification have limited opportunities to embed accessibility competencies within a business.

8. Developing Web accessibility procedural standards into an opportunity for certification

Interest organizations have yet to provide procedural certification to support compliance with Web accessibility policies. While procedural standards have emerged in the U.K., procedural certification has yet to emerge in either the U.K. or the U.S. However, interest organizations have implemented accessibility procedures as a part of auditing.

Procedural certification could involve compliance with a procedural standard, such as BS 8878 and provide an opportunity for interest organizations to interact with different departments of a business through the evaluation of management processes. Thus, a procedural standard could provide a basis for managing corporate accessibility efforts.

In conclusion, procedural certification could support compliance by 1) assessing a business's processes; 2) managing accessibility practices; 3) supporting the adoption of procedural standards or practices for implementing Web accessibility; and, 4) publicly demonstrating the quality of corporate accessibility practices.

9. Certification as a mechanism for achieving compliance

Voluntary certification initiatives can support compliance by establishing accessible content through performance certification, embedding accessibility competencies in a business through professional certification and integrating accessibility throughout a business through procedural certification. Though the U.K. and U.S. have adopted different approaches to regulating web accessibility, a legal obligation for Web accessibility has emerged.

This paper demonstrates that interest organizations in the U.K. and U.S. have used performance and professional certification to support compliance with Web accessibility obligations. Thus, the results from the U.K. confirm results in the U.S. and suggest that despite differing approaches to regulating Web accessibility, interest organizations have contributed to the development of voluntary certification initiatives. The results also suggest that the introduction of a procedural certification initiative could promote compliance by integrating accessibility processes throughout a business.

We applied new data on the implementation of Web accessibility policies to models of audit and certification and demonstrates the conditions where interest organizations can use certification to support compliance. The results confirm previous models of audit and certification by demonstrating the role of interest organizations in certifying compliance. Previous research has modeled policy actors involved in audit and certification as advisors that assess compliance and act independently from standardization processes (Brunsson and Jacobsson, 2000; Courville, 2003; Haufler, 2003; Power, 1997).

The results suggest that interest organizations act as advisors in assessing compliance. However, while organizationally, standardization and certification remain distinct, the responsibilities of interest organizations frequently obscure the role of standardizer and certifier.

In addition, the results suggest that audit and certification promote accountability and transparency. Previous research has modeled auditing as an approach to achieving accountability and transparency (Courville, 2003; Power, 1997). However, previous research has yet to differentiate audit and certification processes from outcomes related to accountability and transparency.

While this article confirms the use of audit and certification to promote accountability and transparency, the results also suggest that audit and certification relate differently to accountability and transparency. Interest organizations audit to assess compliance and promote accountability and certify to publicly demonstrate accountability and promote transparency. Thus, this paper argues that audit may relate more to achieving accountability, while certification may relate more to achieving transparency.

This paper also extended models of audit and certification. The results suggest that interest organizations have supported compliance through audit and professional certification. While previous research has demonstrated the relationship of social regulation and professionalization (Garoupa, 2011; Svensson and Åström, 2013), models of audit and certification have yet to incorporate professionalization as a mechanism of compliance.

The results suggest that interest organizations have used certification to promote Web accessibility as a professional competency. Interest organizations have used professional certification to embed accessibility competencies in a business. Thus, we argue that professional certification acts as a mechanism for supporting compliance.

In addition, the results imply that interest organizations can enforce compliance by revoking certification. While previous research has theorized that expanding the range of enforcement options promotes compliance (Ayres and Braithwaite, 1992), models of audit and certification have yet to recognize the role of certification in expanding enforcement options.

We suggest that interest organizations can enforce voluntary commitments by businesses through a combination of litigation and voluntary audit and certification. Interest organizations use litigation and legal threats to enforce Web accessibility coercively and use audit and certification to enforce web accessibility cooperatively.

The results further suggest that an implicit agreement structures the relationship between interest organizations and businesses. Businesses agree to cooperate with interest organizations in attaining certification and avoiding potential litigation. By refusing or revoking certification, interest organizations can indicate potential violations of the law. Thus, we argue that certification supports voluntary approaches to regulation by integrating and expanding enforcement options.



10. Conclusion and recommendations

This article demonstrates that interest organizations have used performance and professional certification to support compliance. Interest organizations have used performance certification to establish accessible Web content. However, the experiences of interest organizations demonstrates that a lack of regulatory guidance limits the use of certification to support compliance.


Interest organizations have also used professional certification to embed accessibility competencies within an organization. However, the experiences of interest organizations demonstrates that the lack of formalized criteria for an individual's accessibility knowledge and experience limits the use of certification to support compliance.

Barriers to certification have contributed to the introduction of low quality certification initiatives. This paper recommends remediating the barriers to certification by establishing regulatory guidance and developing educational standards. Regulatory guidance may provide a useful basis for improving the quality of performance certification. An international organization, such as the International Association of Accessibility Professionals, could establish and clarify rules for performance certification.

In addition, developing educational standards may provide a useful basis for improving the quality of professional certification. As accreditation agencies typically operate nationally, we argue that interest organizations should support the development of national educational standards.

Finally, procedural standards may provide a useful basis for introducing procedural certification. While interest organizations have yet to introduce procedural certification, this article suggests procedural certification could enhance compliance by integrating accessibility processes throughout a business. Thus, we recommend that interest organizations support the development of an international procedural standard for Web accessibility and use that standard to introduce procedural certification initiatives.

In addition, the results provide a useful basis for future research. This article recommends that future research continue to examine the role of certification in enforcement. While the results suggest different mechanisms for achieving compliance through performance, professional or procedural certification, the relationship between certification and enforcement provides a useful area for further exploration.

In addition, interest organizations provide multiple certifications. Thus, disaggregating the effects of individual certification initiatives could provide another useful area for understanding the role of certification and compliance. 

About the author

G. Anthony Giannoumis is an Adjunct Lecturer at the Department of Computer Science at Oslo and Akershus University College of Applied Sciences.
E-mail: E-mail: gagian [at] hioa [dot] no

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Appendices

Appendix A: Informed Consent Form



*Norsk institutt for forskning
om oppvekst, velferd og aldring*

Comparative Case Study of E-Accessibility Policy Implementation

To Whom It May Concern:

The Norwegian Social Research Institute (NOVA) is conducting research on the design and implementation of national and supranational E-Accessibility policies. The goal of the project is examine the role of the national and international legislation in promoting E-Accessibility policy and outcomes, and investigate the impact of national policy traditions on the design and implementation of E-Accessibility policies in Hong Kong, the United Kingdom, the United States and Norway. We also wish to learn about the work being done by regulators, advocates, businesses, and standards organizations to promote E-Accessibility and web accessibility. In addition, we are interested in any changes to policy they might recommend. This information will provide a context for a comparison between the different countries. In addition, it will help to inform recommendations for practice and policy modifications and improvement.

While senior research Rune Halvorsen has the overall responsibility for the research project, Anthony Giannomis is working towards a Ph.D. on this topic.

As part of this project, we are conducting informal interviews to learn more about the issues that organizations in this area encounter. We invite you to participate in an interview to learn about your experiences, your knowledge, and your insights into these issues. Involvement in the study is voluntary, so you may choose to participate or not. Please feel free to ask questions about the research if you have any. We will be happy to explain anything in detail if you wish.

The interview will take place a time convenient for you—during the day or evening, on a weekday or weekend. We expect the interview to take approximately 30-60 minutes. Each interview will be audio recorded for both accuracy and later analysis. All information will be kept confidential. This means that your name will not appear anywhere and your specific answers will not be linked to your name in any way or your organization. In any reports we write, we will not reveal any details that could identify you. The audio recording of your interview will be destroyed and the data will be archived and anonymised by 31.12.2015. With your permission, we would like to retain your contact information for the purposes of follow-up or clarification until the end of 2015.

The benefit of this research is that you will contribute to an understanding of the issues faced by policymakers with regard to web accessibility. There will be no direct benefits to you in taking part, but there will also be minimal risk. In addition, you can refuse to answer any questions and are free to stop the interview at any time.

If you do not want to take part in the study, you have the right to refuse, without any penalty. If you decide to take part and later no longer wish to continue, you have the right to withdraw from the study at any time, also without penalty.

If you have any questions, concerns, or complaints about the research, please do not hesitate to contact us. If you have any questions about your rights as a research participant, if you have questions, concerns, or complaints that you wish to address to someone other than the investigator, or if you cannot reach the investigators, contact the NOVA reception at +47 22 54 12 00.

Dr Rune Halvorsen
Senior Researcher, Project Leader
Tel +47 22 54 13 51.
rune.halvorsen@nova.no
www.nova.no

Anthony Giannoumis
Marie Curie Fellow
Tel +47 22 54 13 49
george.a.giannoumis@nova.no
www.nova.no

**Consent to Participate in Research:
Comparative Case Study of E-Accessibility Policy Implementation**

All of my questions have been answered; I am over the age of 18 and I wish to participate in this research study. I have received a copy of this consent form.

My name is _____

You may reach me by phone by email at _____, and by email at : _____

I agree to be audio-recorded.

I do not agree to be audio-recorded.

Appendix B: Interview Guide

Questions

1. I'd like to start off by discussing how you work with E-Accessibility at INSTITUTION NAME?

2. Can you give a general assessment of E-Accessibility in Norway as it pertains to...
 - a. The public sector?

 - b. The private sector?

3. I'm very interested in the relationships between INSTITUTION NAME and other areas of the public and private sector. Can you discuss how INSTITUTION NAME has worked with...
 - a. ...Private sector enterprises?

 - b. ...Standards organizations nationally and internationally...

 - c. ...Advocacy organizations nationally and internationally ...

 - d. ...Regulatory Agencies nationally and internationally ...

 - e. ...policymakers from nationally and internationally ...

4. As we know, web based technologies are developing at an exponential rate...
 - a. How has INSTITUTION NAME handled the pace of these developments?

 - b. How have those changes taken into account persons with disabilities?

5. Governments are often required to balance economic and social needs. In your experience with INSTITUTION NAME, what do you feel are the incentives or barriers to improving web accessibility in the...
 - a. ...public sector...

 - b. ...private sector...

6. Standards writing plays a role in setting benchmarks. In what ways do you feel that standards...
 - a. ...help to improve web accessibility?

b. ...hinder the improvement of web accessibility?

c. ...impact INSTITUTION NAME's activities, goals, and resources?

7. What resources would INSTITUTION NAME need in order to achieve web accessibility standards?

8. Are there lessons that other countries can learn from the Norwegian experience?

9. IS there anything else you'd like to add?

May I contact you if I have any other questions?

Bonus questions

1. How do you view the business (economic) case versus the human rights (non-discrimination) case for accessibility? How do you think the economic crisis has changed these views? How do you think globalization has changed these views?
2. Awareness raising is often crucial for achieving political momentum, can you reflect on the role of public visibility for accessibility related issues? How do you see the role of training in raising awareness?
3. What forms of evidence are missing from the current debate on accessibility? How would you disseminate that evidence?
4. Can you give some best practice examples for achieving accessibility?
5. How do you situate Universal Design or Design for All in the discussion around accessibility?
6. What are the most critical or overlooked roles for persons with disabilities and DPOs for achieving accessibility?
7. What role could accreditation serve in achieving accessibility?
8. How would you handle compliance / noncompliance? What is your ideal enforcement mechanism?
9. How would you characterize the relationship that persons with disabilities have with technology? Can you discuss that relationship in terms of self-reliance?
10. What do you see as the future role and use of assistive technologies?
11. What are the primary limitations to a policy approach to accessibility?

Appendix C: Ethics Approval

COPY



Harald Hårfagres gate 29
N-5007 Bergen
Norway
Tel +47-55 58 21 17
Fax +47-55 58 96 50
nsd@nsd.uib.no
www.nsd.uib.no
Org.nr. 985 321 884

Rune Halvorsen
Norsk institutt for forskning om oppvekst, velferd og aldring (NOVA)
Postboks 3223 Elisenberg
0208 OSLO

Vår dato: 31.08.2012

Vår ref:30593 / 3 / M55

Deres dato:

Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 04.05.2012. All nødvendig informasjon om prosjektet forelå i sin helhet 28.08.2012. Meldingen gjelder prosjektet:

30593	<i>A Comparative Case Study of E-Accessibility Policy Implementation in The United Kingdom, Norway and The United</i>
Behandlingsansvarlig	<i>NOVA, ved institusjonens øverste leder</i>
Daglig ansvarlig	<i>Rune Halvorsen</i>

Personvernombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldepliktig i henhold til personopplysningsloven § 31. Behandlingen tilfredsstiller kravene i personopplysningsloven.

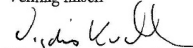
Personvernombudets vurdering forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, eventuelle kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, http://www.nsd.uib.no/personvern/forsk_stud/skjema.html. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://www.nsd.uib.no/personvern/prosjektoversikt.jsp>.

Personvernombudet vil ved prosjektets avslutning, 31.12.2015, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen


Vigdís Namtvedt Kvalheim


Marie Strand Schildmann

Marie Strand Schildmann tlf: 55 58 31 52
Vedlegg: Prosjektvurdering

Avdelingskontorer / District Offices

OSLO NSD, Universitetet i Oslo, Postboks 1055 Blindern, 0316 Oslo Tel: +47-22 85 52 11. nsd@uio.no
TRONDHEIM NSD, Norges teknisk-naturvitenskapelige universitet, 7491 Trondheim Tel: +47-73 59 19 07. kyrr.svarva@svt.ntnu.no
TROMSØ NSD, SVU, Universitetet i Tromsø, 9037 Tromsø Tel: +47-77 64 43 36. nsdmaa@svu.ut.no

Personvernombudet for forskning



Prosjektvurdering - Kommentar

Prosjektnr: 30593

Formålet med prosjektet er å undersøke hvilken rolle FN og EU har i å fremme E-Tilgjengelighet i politikk og resultater, samt undersøke virkningen av nasjonale politiske tradisjoner på design og implementering av E-Tilgjengelighetsfunksjoner i Storbritannia, USA og Norge.

Prosjektet gjennomføres av NOVA v/prosjektleder Rune Halvorsen. I tillegg skal Phd-kandidat Giannoumis, ved National University of Ireland, tilknyttes prosjektet.

Utvalget består av 4-12 beslutningstakere fra utvalgte IKT-bransjer/foretak, kontrollorganer, organisasjoner og interesseorganisasjoner (DPO). Utvalget rekrutteres via organisasjoner/foretak.

Personvernombudet finner informasjonsskriv av 28.08.2012 tilfredsstillende.

Datamaterialet innhentes gjennom personlige intervjuer. Intervjuene transkriberes av ekstern part, og vi forutsetter at det undertegnes en databehandleravtale mellom NOVA og foretaket som transkriberer.

Direkte personidentifiserende opplysninger oppbevares separat, kun tilknyttet øvrige data via en koblingsnøkkel.

Dato for prosjektslutt er 31.12.2015. Datamaterialet anonymiseres ved at verken direkte eller indirekte personidentifiserende opplysninger fremgår. Koblingsnøkkel og lydfilet slettes. Indirekte personidentifiserende opplysninger fjernes, omskrives eller grovkategoriseres.



MELDESKJEMA

Meldeskjema (versjon 1.3) for forsknings- og studentprosjekt som medfører meldeplikt eller konsesjonsplikt (jf. personopplysningsloven og helseregisterloven med forskrifter).

1. Prosjektittel		
Titel	A COMPARATIVE CASE STUDY OF EACCESSIBILITY POLICY IMPLEMENTATION IN THE UNITED KINGDOM, NORWAY AND THE UNITED	
2. Behandlingsansvarlig institusjon		
Institusjon	NOVA	Velg den institusjonen du er tilknyttet. Alle nivå må oppgis. Ved studentprosjekt er det studentens tilknytning som er avgjørende. Dersom institusjonen ikke finnes på listen, vennligst ta kontakt med personvernombudet.
Avdeling/Fakultet	null	
Institutt	null	
3. Daglig ansvarlig (forsker, veileder, stipendiat)		
Fornavn	Rune	Før opp navnet på den som har det daglige ansvaret for prosjektet. Veileder er vanligvis daglig ansvarlig ved studentprosjekt. Veileder og student må være tilknyttet samme institusjon. Dersom studenten har ekstern veileder, kan biveileder eller fagansvarlig ved studiestedet stå som daglig ansvarlig. Arbeidssted må være tilknyttet behandlingsansvarlig institusjon, f.eks. underavdeling, institutt etc. NB! Det er viktig at du oppgir en e-postadresse som brukes aktivt. Vennligst gi oss beskjed dersom den endres.
Etternavn	Halvorsen	
Akademisk grad	Doktorgrad	
Stilling	Senior Researcher	
Arbeidssted	NOVA	
Adresse (arb.sted)	Munthesgt. 29	
Postnr/sted (arb.sted)	0260 Oslo	
Telefon/mobil (arb.sted)	22541351 /	
E-post	rune.halvorsen@nova.no	
4. Student (master, bachelor)		
Studentprosjekt	Ja <input type="radio"/> Nej <input checked="" type="radio"/>	
5. Formålet med prosjektet		
Formål	The United Nations Convention on the Rights of Persons with Disabilities recognizes E-Accessibility as essential for full participation in the information society. This study asks, "How do social institutions affect the design and implementation of national and supranational E-Accessibility policies?" The study will examine the role of the United Nations and the European Union in promoting E-Accessibility policy and outcomes, and investigate the impact of national policy traditions on the design and implementation of E-Accessibility policies in the United Kingdom, the United States and Norway. The comparative case study methodology will include a policy document analysis and semi-structured stakeholder interviews.	Redegjør kort for prosjektets formål, problemstilling, forsknings spørsmål e.l. Maks 750 tegn.
6. Prosjektomfang		
Velg omfang	<input checked="" type="radio"/> Enkel institusjon <input type="radio"/> Nasjonalt samarbeidsprosjekt <input type="radio"/> Internasjonalt samarbeidsprosjekt	Med samarbeidsprosjekt menes prosjekt som gjennomføres av flere institusjoner samtidig, som har samme formål og hvor personopplysninger utveksles.
Oppgi øvrige institusjoner		
Oppgi hvordan samarbeidet foregår		
7. Utvalgsbeskrivelse		

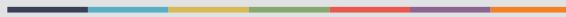
Utvalget	Semi-structured interviews will be conducted with decision makers from select ICT industry enterprises, regulatory agencies, standards organizations, and advocacy organizations (DPO).	Med utvalg menes dem som deltar i undersøkelsen eller dem det innhentes opplysninger om. F.eks. et representativt utvalg av befolkningen, skoleelever med lese- og skrivevansker, pasienter, innsatte.
Rekruttering og trekking	The selection of survey participants will be conducted by the primary investigator and will depend on the opportunity to engage the institutions and establish relationships with institutional representatives.	Beskriv hvordan utvalget trekkes eller rekrutteres og oppgi hvem som foretar den. Et utvalg kan trekkes fra registre som f.eks. Folkeregisteret, SSB-registre, pasientregistre, eller det kan rekrutteres gjennom f.eks. en bedrift, skole, idrettsmiljø, eget nettverk.
Førstegangskontakt	The primary investigator will be responsible for establishing initial contact with participants via online (email, social networking, etc.) or personal (in person conversation, telephone, etc.) communications.	Beskriv hvordan førstegangskontakten opprettes og oppgi hvem som foretar den. Les mer om førstegangskontakt
Alder på utvalget	<input type="checkbox"/> Barn (0-15 år) <input type="checkbox"/> Ungdom (16-17 år) <input checked="" type="checkbox"/> Voksne (over 18 år)	
Antall personer som inngår i utvalget	4 - 12	
Inkluderes det myndige personer med redusert eller manglende samtykkekompetanse?	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	Begrunn hvorfor det er nødvendig å inkludere myndige personer med redusert eller manglende samtykkekompetanse.
Hvis ja, begrunn		Les mer om inklusjon i forskning av myndige personer med redusert eller manglende samtykkekompetanse
8. Metode for innsamling av personopplysninger		
Kryss av for hvilke datainnsamlingsmetoder og datakilder som vil benyttes	<input type="checkbox"/> Spørreskjema <input checked="" type="checkbox"/> Personlig intervju <input type="checkbox"/> Gruppeintervju <input type="checkbox"/> Observasjon <input type="checkbox"/> Psykologiske/pedagogiske tester <input type="checkbox"/> Medisinske undersøkelser/tester <input type="checkbox"/> Journaldata <input type="checkbox"/> Registerdata <input type="checkbox"/> Annen innsamlingsmetode	Personopplysninger kan innhentes direkte fra den registrerte f.eks. gjennom spørreskjema, intervju, tester, og/eller ulike journalter (f.eks. elevmapper, NAV, PPT, sykehus) og/eller registre (f.eks. Statistisk sentralbyrå, sentrale helseregistre).
Annen innsamlingsmetode, oppgi hvilken		
Kommentar	one-on-one semi-structured interviews	
9. Datamaterialets innhold		
Redegjør for hvilke opplysninger som samles inn	The interviews will begin with an open ended question regarding the role of E-Accessibility in the participant's organization. The interview will progress based on participant responses and the framework of the interviewer's guide.	Spørreskjema, intervju-temaguide, observasjonsbeskrivelse m.m. sendes inn sammen med meldeskjemaet. NBI Vedleggene lastes opp til sist i meldeskjema, se punkt 16 Vedlegg.
Samles det inn direkte personidentifiserende opplysninger?	Ja <input checked="" type="radio"/> Nei <input type="radio"/>	Dersom det krysses av for ja her, se nærmere under punkt 11 Informasjonssikkerhet.
Hvis ja, hvilke?	<input type="checkbox"/> 11-sifret fødselsnummer <input checked="" type="checkbox"/> Navn, fødselsdato, adresse, e-postadresse og/eller telefonnummer	Les mer om hva personopplysninger er
Spesifiser hvilke	Name will be recorded as part of the project administration.	NBI Selv om opplysningene er anonymiserte i oppgave/rapport, må det krysses av dersom direkte og/eller indirekte personidentifiserende opplysninger innhentes/registreres i forbindelse med prosjektet.
Samles det inn indirekte personidentifiserende opplysninger?	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	En person vil være indirekte identifiserbar dersom det er mulig å identifisere vedkommende gjennom

Hvis ja, hvilke?		bakgrunnsopplysninger som for eksempel bostedskommune eller arbeidsplass/skole kombinert med opplysninger som alder, kjønn, yrke, diagnose, etc.
Samles det inn sensitive personopplysninger?	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	
Hvis ja, hvilke?	<input type="checkbox"/> Rasemessig eller etnisk bakgrunn, eller politisk, filosofisk eller religiøs oppfatning <input type="checkbox"/> At en person har vært mistenkt, siktet, tiltalt eller dømt for en straffbar handling <input type="checkbox"/> Helseforhold <input type="checkbox"/> Seksuelle forhold <input type="checkbox"/> Medlemskap i fagforeninger	
Samles det inn opplysninger om tredjeperson?	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	Med opplysninger om tredjeperson menes opplysninger som kan spores tilbake til personer som ikke inngår i utvalget. Eksempler på tredjeperson er kollega, elev, klient, familiemedlem.
Hvis ja, hvem er tredjeperson og hvilke opplysninger registreres?		
Hvordan informeres tredjeperson om behandlingen?	<input type="checkbox"/> Skriftlig <input type="checkbox"/> Muntlig <input type="checkbox"/> Informeres ikke	
Informeres ikke, begrunn		
10. Informasjon og samtykke		
Oppgi hvordan utvalget informeres	<input checked="" type="checkbox"/> Skriftlig <input checked="" type="checkbox"/> Muntlig <input type="checkbox"/> Informeres ikke	Vennligst send inn informasjonsskrivet eller mal for muntlig informasjon sammen med meldeskjema.
Begrunn		<p>NBI Vedlegg lastes opp til sist i meldeskjemaet, se punkt 16 Vedlegg.</p> <p>Dersom utvalget ikke skal informeres om behandlingen av personopplysninger må det begrunnes.</p> <p>Les mer om krav til informasjon og gyldig samtykke, samt om forskning uten samtykke</p>
Oppgi hvordan samtykke fra utvalget innhentes	<input checked="" type="checkbox"/> Skriftlig <input checked="" type="checkbox"/> Muntlig <input type="checkbox"/> Innhentes ikke	Dersom det innhentes skriftlig samtykke anbefales det at samtykkeerklæringen utformes som en svarslipp eller på eget ark. Dersom det ikke skal innhentes samtykke, må det begrunnes.
Innhentes ikke, begrunn		
11. Informasjonssikkerhet		
Direkte personidentifiserende opplysninger erstattes med et referansenummer som viser til en atskilt navneliste (koblingsnøkkel)	Ja <input checked="" type="radio"/> Nei <input type="radio"/>	Har du krysset av for ja under punkt 9 Datamaterialets innhold må det merkes av for hvordan direkte personidentifiserende opplysninger registreres.
Hvordan oppbevares navnelisten/koblingsnøkkelen og hvem har tilgang til den?	They will be stored on the PIs laptop, accessible only to the PI	NBI Som hovedregel bør ikke direkte personidentifiserende opplysninger registreres sammen med det øvrige datamaterialet.
Direkte personidentifiserende opplysninger oppbevares sammen med det øvrige materialet	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	
Hvorfor oppbevares direkte personidentifiserende opplysninger sammen med det øvrige datamaterialet?		
Oppbevares direkte personidentifiserbare opplysninger på andre måter?	Ja <input checked="" type="radio"/> Nei <input type="radio"/>	

Spesifiser	stored in emails and recruitment lists	
Hvordan registreres og oppbevares datamaterialet?	<input checked="" type="checkbox"/> Fysisk isolert datamaskin tilhørende virksomheten <input type="checkbox"/> Datamaskin i nettverkssystem tilhørende virksomheten <input checked="" type="checkbox"/> Datamaskin i nettverkssystem tilknyttet Internett tilhørende virksomheten <input type="checkbox"/> Fysisk isolert privat datamaskin <input type="checkbox"/> Privat datamaskin tilknyttet Internett <input type="checkbox"/> Videoopptak/fotografi <input type="checkbox"/> Lydopptak <input type="checkbox"/> Notater/papir <input type="checkbox"/> Annen registreringsmetode	<p>Merk av for hvilke hjelpemidler som benyttes for registrering og analyse av opplysninger.</p> <p>Sett flere kryss dersom opplysningene registreres på flere måter.</p>
Annen registreringsmetode beskriv		
Behandles lyd-/videoopptak og/eller fotografi ved hjelp av datamaskinbasert utstyr?	Ja • Nei ○	<p>Kryss av for ja dersom opptak eller foto behandles som lyd-/bildefil.</p> <p>Les mer om behandling av lyd og bilde.</p>
Hvordan er datamaterialet beskyttet mot at uvedkommende får innsyn?	yes, the computer is password protected, and documents are encrypted and password protected	Er f.eks. datamaskintilgangen beskyttet med brukernavn og passord, står datamaskinen i et låsbart rom, og hvordan sikres bærbare enheter, utskriftler og opptak?
Dersom det benyttes mobile lagringsenheter (bærbare datamaskin, minnepenn, minnekort, cd, eksterne harddisk, mobiltelefon), oppgi hvilke	A Dell Latitude Laptop will be used as audio recording and storage device and an Ipod Touch will be used as a audio recording and temporary file storage device.	NBI Mobile lagringsenheter bør ha mulighet for kryptering.
Vil medarbeidere ha tilgang til datamaterialet på lik linje med daglig ansvarlig/student?	Ja ○ Nei •	
Hvis ja, hvem?		
Overføres personopplysninger ved hjelp av e-post/internett?	Ja • Nei ○	F.eks. ved bruk av elektronisk spørreskjema, overføring av data til samarbeidspartner/databehandler mm.
Hvis ja, hvilke?	Name and recruitment information	
Vil personopplysninger bli utlevert til andre enn prosjektgruppen?	Ja ○ Nei •	
Hvis ja, til hvem?		
Samles opplysningene inn/behandles av en databehandler?	Ja • Nei ○	Dersom det benyttes eksterne til helt eller delvis å behandle personopplysninger, f.eks. Questback, Synovate MMI, Norfakta eller transkriberingsassistent eller tolk, er dette å betrakte som en databehandler. Slike oppdrag må kontraktreguleres
Hvis ja, hvilken?	Interviews will be transcribed by LSD Business Services Flinders, 25 Audley Close, Shipley Bive, Derbyshire, DE7 9JH +44 (0115) 9178528 admin@lsdbs.co.uk. client confidentiality statement and business services card attached.	Les mer om databehandleravtaler her
12. Vurdering/godkjenning fra andre instanser		
Søkes det om dispensasjon fra taushetsplikten for å få tilgang til data?	Ja ○ Nei •	For å få tilgang til taushetsbelagte opplysninger fra f.eks. NAV, PPT, sykehus, må det søkes om dispensasjon fra taushetsplikten. Dispensasjon søkes vanligvis fra aktuelt departement. Dispensasjon fra taushetsplikten for helseopplysninger skal for alle typer forskning søkes
Kommentar		Regional komité for medisinsk og helsefaglig forskningsetikk
Søkes det godkjenning fra andre instanser?	Ja ○ Nei •	F.eks. søke registreier om tilgang til data, en ledelse om tilgang til forskning i virksomhet, skole, etc.
Hvis ja, hvilke?		



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