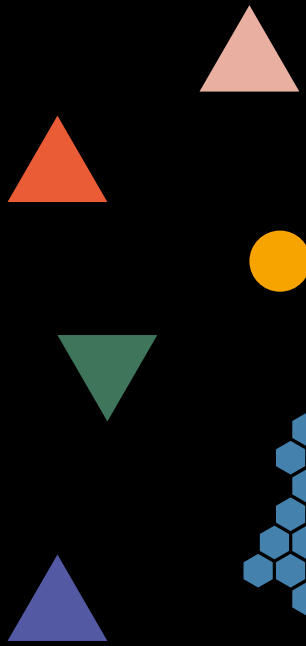
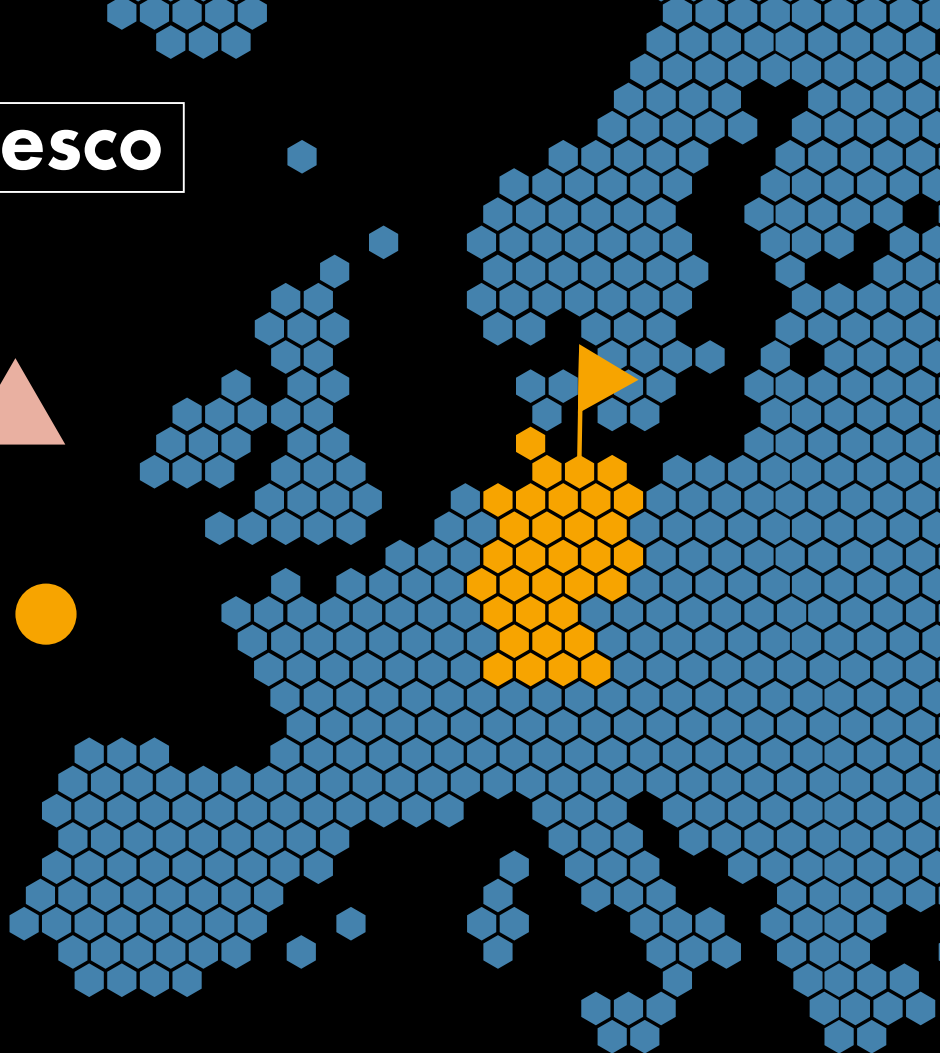




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ASSESSING
INTERNET
DEVELOPMENT IN

GERMANY

Using UNESCO's Internet
Universality ROAM-X Indicators



This is the 5th edition of UNESCO Publication Series on Internet Universality National Assessments. This Series is a means to share good practices in voluntarily assessing the Internet Universality ROAM-X Indicators at national level. It follows the resolution of UNESCO's 31st session of the Council of the International Programme for the Development of Communication (IPDC) in November 2018, by which Member States were given the green light to engage in voluntary assessments of their Internet environment using the ROAM-X Indicators.

By evaluating a given country's Internet environment against the ROAM-X indicators, the national assessment process aims to:

- Present a comprehensive and substantive understanding of the national Internet environment and policies;
- Assess their alignment to UNESCO's R.O.A.M. principles and their contribution to sustainable development;
- Develop policy recommendations and practical initiatives that will enable the country to improve their Internet ecosystem as advanced ICTs evolve.

The national assessment of Germany is the 5th edition of the Series, following Brazil, Benin, Senegal and Kenya.



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The International
Programme for
the Development
of Communication

ASSESSING INTERNET DEVELOPMENT IN GERMANY

**Using UNESCO's Internet
Universality ROAM-X Indicators**

Leibniz Institute for Media Research | Hans-Bredow-Institut

Note: This is an assessment of 109 core indicators and 21 contextual indicators instead of the full set of 303 indicators, and it is therefore not intended to cover all dimensions of the digital ecosystem in the country, but serves to take stock of significant progress and signal those gaps in a need to be improved in adhering to ROAM framework. As the Internet environment is changing very fast, so are the data collected and analysis and recommendations made upon. UNESCO encourages countries to continue the dialogues about the findings, and to update the assessment after due time while also keeping track of the latest developments to monitor and adapt and sometimes strengthen the recommendations to further enhance their impact, as appropriate.

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The ideas and opinions expressed in this publication are those of the authors; they are not necessarily those of UNESCO and do not commit the Organization.

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Foreword by Tawfik Jelassi



Digital innovation and transformation are tremendously improving lives, and much of it is due to how the Internet has expanded access to information and knowledge. The Internet has changed the speed and the ways by which we communicate, shop, work, learn, consume, manage our finances, access services, and even how we may meet a life partner. It has improved business efficiency and effectiveness in both the public and private spheres. Yet, digital divides and barriers – such as lack of meaningful connectivity, sparse accessibility and languages, to mention a few – leave many behind. In addition, the expansion of digital ecosystems and platforms has brought new risks, including erosion of freedom of expression and right to privacy, biased algorithm-driven decision models that exclude or penalize vulnerable groups, and increased exposure to cybersecurity risks. Thus, societies are confronting a key question: how can we place people’s empowerment and wellbeing at the center of how Internet ecosystems evolve?

UNESCO answers this question through the framework of Internet Universality ROAM-X principles endorsed by its Member States in 2015 during UNESCO’s 38th General Conference, which proposes that the Internet must be human-Rights based, **O**pen, **A**ccessible to all, and governed through **M**ulti-stakeholder participation. The framework offers a systematic methodology that allows Member States and all stakeholders, on a voluntary basis, to assess Internet development at the national level, through 303 Internet Universality ROAM-X Indicators including 109 core ones, that examine to what extent a national digital ecosystem adheres to the ROAM dimensions and to crosscutting issues (**X**) such as gender equality, children’s rights, and sustainability.

The present voluntary assessment report of Internet Universality ROAM-X Indicators in Germany is the **5th report in the Internet Universality series**, following reports issued by Brazil, Benin, Senegal, and Kenya. It presents the comprehensive evidence collected through an inclusive multi-stakeholder process and methodology, and highlights the complex dimensions of the Internet, as well as self-assessed areas for improvements in the country’s digital environment.

This successful exercise, led by Professor Dr. Wolfgang Schulz and Professor Dr. Matthias C. Kettmann from the Leibniz Institute for Media Research | Hans-Bredow-Institut, with support

from the German National Commission for UNESCO and the German Federal Foreign Office, was conducted by a Multi-stakeholder Advisory Board (MAB) formed by representatives of government, the private sector and civil society especially for this research.

The resulting report shows the universal relevance of the ROAM-X principles and indicators to all countries in the global north and south and sets a model for similar assessments in other countries, in Europe and beyond. It demonstrates Germany's commitment to promoting the ROAM-X principles in its national digital environment, and its pioneering spirit in contributing to how Internet governance and digital transformation processes are shaped around the world. In addition, this report could pave the way towards an in-depth reflection on existing Internet-related approaches and policies in the country and abroad.

Presentation of the German assessment findings to the Bundestag's Digital Agenda Committee of the German parliament in June 2021 established the foundation for the next important steps in shaping Germany's national digital strategy and contributed to enhancing multi-stakeholder governance via the continued engagement of the Multi-stakeholder Advisory Board, when moving from policy recommendations to concrete actions that lead to sustainable results. UNESCO will continue to support national policy makers and stakeholders in this process.

With rapidly evolving digital knowledge societies and building on lessons learned through the pandemic, it will be important to measure in due course the impact of this inclusive assessment process and of the implementation of the recommendations. Beyond the value of this exemplary situational snapshot, renewing and updating the assessment enables decision-makers to identify trends within the country, and monitor the results of Internet changes initiated by this assessment process and publication.

In the spirit of a ROAM-X guided Internet transformation process, leading to sustainable development for all, I trust that this inclusive process and insightful report will lay the foundations for joint action towards Internet Universality.



Professor Dr. Tawfik Jelassi

Assistant Director-General for Communication and Information
UNESCO

Foreword by Regine Grienberger



Digitalisation affects everyone – citizens as well as companies and the self-employed, academia and society, culture and the media. The Federal Government wants to shape digital transformation actively and equitably and also optimally position Germany. The aim is to further improve the quality of life for all people in Germany, especially in the digital context, to develop the economic, ecological, social and cultural potential of digitalisation and to ensure social cohesion and the common good.

The Federal Foreign Office and I, in my capacity as the Ambassador for Cyber Foreign Policy and Cyber Security, support the United Nations and UNESCO and their ROAM-X indicators in shaping Internet policy. I was therefore very happy to assume the chair of the multistakeholder advisory board providing support for the application of the UNESCO Internet Universality Indicators in Germany. This report on their application is a milestone for shaping digitalisation in a way that promotes equal opportunities in Germany.

This initiative of the German Commission for UNESCO in cooperation with the Leibniz Institute for Media Research | Hans-Bredow-Institut in Hamburg forms an excellent basis for our joint work in the years to come. This also means momentum for the Federal Government's digitalisation strategy.

The Federal Government's implementation of this strategy, described in the publication '**Shaping digitalisation**', offers specific solutions to the challenges of digital transformation in **five spheres of activity**: digital competence, infrastructure and equipment, innovation and digital transformation, the societal shift towards digitalisation and the modern state.

The Federal Government invests in the **digital skills** of people of all genders and ages. Everyone should be able to take advantage of the opportunities offered by digitalisation, help shape digital transformation autonomously and manage the opportunities and risks responsibly. To this end, more high-quality programmes will be provided in all areas and, moreover, the educational system will be geared even more towards a digitally shaped life, a digital working and business world and the digital knowledge society. For example, the service agency 'Digitalisation and Education for Seniors' focuses on digital competence for older people. It acts as a nationwide network hub together with its online platform for initiatives, advice and

information *wissensdurstig.de*. In addition, the service agency provides training opportunities for multipliers and promotes trend-setting projects nationwide, including for target groups that are harder to reach and for people in rural areas.

With its 'DigitalPact School,' the Federal Government is making sure that around 43,000 schools in Germany will have fast Internet connections and high-performing digital learning infrastructure, such as broadband connections for school buildings, WiFi expansion, digital interaction and display devices and other work equipment for educational use. Up to five billion euros will be available for this over a period of five years. As a mother, this is a matter that concerns me particularly and also personally.

Efficient **infrastructure and equipment** are the lifeblood of our society. This includes digital networks in particular. They constitute the prerequisite that gives people as well as companies and public administrations the ability to actively and innovatively make use of the opportunities of the digital transformation and this, in equal measure, in urban as well as rural areas. The goal is a network connection for everyone - anytime and anywhere. The particular importance and vulnerability of digital infrastructures means that high security standards and special protection for personal data are required.

The intention is for Germany to become a leading market for 5G applications. With its 5x5G strategy, the Federal Government provides support for the testing of 5G applications in real-world environments, thus initiating pioneering projects. The aim is to ensure comprehensive high-performance mobile network coverage.

The power to shape these changes in an active and equitable way and, together, to create something new is a precondition for safeguarding long term sustainable prosperity and social cohesion in Germany, Europe and the world. The Federal Government wants to ensure that **innovation and digital transformation** comply with the legal framework conditions and align with the basic values in Germany and Europe.

We want to become better at turning excellent technological research into excellent products brought to market under the 'Made in Germany' and 'Made in Europe' labels and, thus, set international standards. *The Artificial Intelligence (AI) strategy* is intended to advance the research, development and application of AI in and from Germany to a leading level worldwide. In the health sector, for example, AI can help identify diseases at an early stage and develop new treatment options.

Something that cannot be repeated often enough is that digitalisation has to be guided by the values and the common good of a **society shifting towards digitalisation**. The focus must always be on people, on their needs and opportunities. Regardless of whether someone is open to digitalisation, has fears about or has been indifferent to the digital world thus far - all our lives should become better and safer as a result of the digital transformation.

Developments can only constitute positive progress if the digital transformation is at the heart of society, organised so as to provide equal opportunities and accepted by all social groups. All groups should be able to equally share the opportunities. We want to establish the framework for this - nationally, in Europe and globally.

A **modern state** also means that exchanges with administrative bodies should be easy and secure for the population as well as for companies and academia. By the end of 2022, all administrative services will be provided digitally and will be accessible online.

A *national health portal* will become the central point for accessing information on all aspects of health. It is being developed on the Internet and is intended to make an important contribution to improving general health literacy in the population. The portal will have a strict focus on the following criteria: user orientation, transparency, absence of advertising, high quality standards and data protection.

While diplomacy attaches a lot of importance to the handshake and a constructive atmosphere in the room, nevertheless, the COVID-19 pandemic has shown us that things can and have to be different.

Since 2020, the Federal Foreign Office has relocated many classic formats to the virtual space and has acquired and used a new diplomatic tool. In a time that forces us to work in a way that minimises our contacts, the Internet helps us to stay connected and to cooperate. It often makes it even easier for us to bridge large distances and consult with Asia in the morning and America in the afternoon, all without leaving the office.

We all rely on a common, open, free and secure Internet that is accessible to everyone and is people-centred. These are the same things that the United Nations and UNESCO aspire to with their ROAM-X indicators. We would like to play a part in ensuring that this remains so for Germany and our partners around the world.



Dr. Regine Grienberger

Ambassador for Cyber Foreign Policy and Cyber Security
Federal Foreign Office

Foreword by Maria Böhmer



'How is the Internet doing in Germany'? We invite you to develop an informed opinion on the basis of this report.

After all, these days, the Internet with its broad selection of information and knowledge shapes the lives of people of all genders and of all ages worldwide. In the process, in view of its importance, the Internet is changing societies at a breathtakingly fast pace. For equal participation in social life, all people need free and easy access to information resources and they should be able to play an active role in the exchange of knowledge.

Societies can only develop their full potential for human development if information and knowledge arise on the basis of a free social order and influence the decision-making process. The Internet also plays an important role as a source of knowledge and a networking platform for achieving the 17 Sustainable Development Goals by 2030.

Independent science, research and teaching are thus necessary to generate knowledge, freedom of the press and of expression and for the creation of independent communication channels. Innovative knowledge societies need an Internet that is based on human rights and is open, accessible and trustworthy.

In 2015, UNESCO developed the concept of Internet Universality as a reference framework for independent digital communication. This is because an important part of UNESCO's mission is to shape the Internet and the related digitalisation in an equitable way for the benefit of humanity. A worldwide system of policy guidelines and legislation shapes the Internet and, thus, access to information and knowledge, freedom of expression, privacy protection and other ethical issues related to the Internet.

The UNESCO member states agreed on four Internet Universality principles for this purpose – the ROAM(X) principles - for shaping a free Internet that is open to all:

Rights,

Openness,

Accessibility,

Multistakeholder participation,

X stands for cross-cutting indicators that are applied in all areas. These include, for example, gender equality, special requirements for children and young people, economic dimensions, trust and security, and legal and ethical aspects.

Subsequently, UNESCO developed Internet Universality indicators that help to determine the 'health status' of the Internet globally, regionally and nationally. The ROAM(X) principles of human rights, openness, accessibility and participation are a particular focus here.

In Germany, despite a high level of development in terms of freedom of the press and of expression as well as access to information, there is also a need for action. In doing so, protecting human rights online is of utmost importance. For example, there is still insufficient legal regulation in Germany of how personal rights (e.g., the right to privacy on online platforms) can be protected without restricting freedom of expression.

For this reason, the German Commission for UNESCO's Committee of Experts on Communication and Information has actively participated in the development of Internet Universality Principles. In the fall of 2019, the Expert Committee organized a workshop discussion on «Internet Governance - Democracy in the Digital Context is Possible.» The central result was the recommendation to assess the state of the Internet in Germany, using UNESCO's Internet Universality Indicators, as it is already being done in various European countries, including France.

I am very pleased that this recommendation has been implemented by the Leibniz Institute for Media Research | Hans-Bredow-Institut under the leadership of its Director Professor Dr. Wolfgang Schulz and Professor Dr. Matthias C. Kettemann. I would also like to express my gratitude to the members of the multistakeholder advisory board who contributed a lot of expertise to this project and its recommendations for action, especially the two chairpersons from the Foreign Office, Dr. Regine Grienberger, Ambassador for Cyber Foreign Policy, and Wolfram von Heynitz. My thanks also go to those who took part in the validation workshop for this report and who ensured broad participation in its preparation.

I am particularly pleased that this report not only analyses the situation, but also makes very specific recommendations for action. This means that all those involved in shaping the Internet in Germany in the future will have key points of reference at their disposal. The German Commission for UNESCO will actively support the implementation with keen interest. We will continue to work towards an Internet based on human rights that is open, accessible and shaped by everyone in Germany, Europe and the world.



Professor Dr. Maria Böhmer

President of the German Commission for UNESCO

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The Leibniz Institute for Media Research | Hans-Bredow-Institut is grateful to the German Commission for UNESCO for the mandate to apply UNESCO's Internet Universality Indicators in Germany. We appreciate the support of the Federal Foreign Office for this project and from all stakeholders involved in the development of this publication.

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Abbreviations and Acronyms

AGG	German Equal Treatment Act
AI	Artificial Intelligence
AktG	German Stock Corporation Act
AO	German Fiscal Code
APC	Association for Progressive Communication
App	Application software
ASOG	General Security and Public Order Act
AVMSD-RL	Audiovisual Media Services Directive
BAföG	Federal Education Assistance Act
BDSG	Federal Data Protection Act
BEGTPG	Act on the Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway
BEREC	Body for European Regulators for Electronic Communications
BfDI	Federal Commissioner for Data Protection and Freedom of Information
Bff	Federal Association of Women's Advice Centres and Women's Emergency Calls in Germany
BGB	German Civil Code
BGG	German Disability Equality Act
BITV	German Regulation for the creation of barrier-free information technology
BKA	Federal Criminal Police Office
BMAS	Federal Ministry of Labour and Social Affairs
BMBF	Federal Ministry for Education and Research
BMFSFJ	Federal Ministry for Family Affairs, Seniors Citizens, Women and Youth
BMI	Federal Ministry of the Interior, Building and Community
BMJV	Federal Ministry of Justice and Consumer Protection
BMVI	Federal Ministry of Transport and Digital Infrastructure
BMWi	Federal Ministry for Economic Affairs and Energy
BMZ	Federal Ministry for Economic Cooperation and Development
BND	Federal Intelligence Service
BREKO	The German Broadband Association
BSI	Federal Office for Information Security
BVDW	Federal Association of the Digital Economy
BVerfG	Federal Constitutional Court
BVerwG	Federal Administrative Court
CERT	Computer Emergency Response Team

CFR	Charter of Fundamental Rights
CI	Critical Infrastructures
CIO	Chief Information Officer
COVID-19	Coronavirus SARS-CoV-2
CRC UN	Convention on the Rights of the Child
Cyber-AZ	Cyber Defence Center
DBI	Doing Business Index
DE-CIX	German Commercial Internet Exchange
DFG	German Research Foundation
DIGI e. V.	German Interest Group for the Internet
DIVI	German Institute for Trust and Security on the Internet
DJV	German Association of Journalists
DL-InfoV	German Ordinance on Service Providers' Duty to Inform
DPoIG	German Police Union
DSL	Digital Subscriber Line
EAA	European Accessibility Act
ECHR	European Court of Human Rights
ECPMF	European Centre for Press and Media Freedom
EDPB	European Data Protection Board
EGBGB	Introductory Act to the German Civil Code
EEDI	E-Government Development Index
EGovG	E-Government Act
eIDAS	Electronic Identification, Authentication and Trust Services
EIGE	European Institute for Gender Equality
EnWVG	German Energy Industry Act
EPI	E-Participation Index
EGC	General Court of the European Union
ECJ	European Court of Justice
EU GDPR	EU General Data Protection Regulation
EURALO	European Regional At-Large Organization (in ICANN)
EuroDIG	European Internet Governance Forum
FOC	Freedom Online Coalition
FOSS	Free and Open Source Software
FRG	Federal Republic of Germany
FSM	Association of Voluntary Self-Regulation of Digital Media Service Providers e. V.
GAC	Governmental Advisory Committee to ICANN
GDP	Gross Domestic Product
GdP	Police Union
GDPR	General Data Protection Regulation
GewO	German Industrial Code
GewSchG	German Protection against Violence Act
GG	Basic Law
GLÜSTV	State Treaty on Gaming
GmbHG	German Act on Limited Liability Companies

GNI	Gross National Income
GSM	Global System for Mobile Communications
GVG	German Code on Court Constitution
GWB	Act Against Restraints of Competition
HBI	Leibniz Institute for Media Research Hans-Bredow-Institut
HCI	Human Capital Index
HDI	Human Development Index
HGB	German Commercial Code
HLIG	High Level Group on Internet Governance
ICANN	Internet Corporation for Assigned Names and Numbers
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICT	Information and Communication Technology
IDI	Information and Communications Technology Development Index
IETF	Internet Engineering Task Force
IFG	Federal Freedom of Information Act
IGF	Internet Governance Forum
IGF-D	Internet Governance Forum Germany
IPDC	International Programme for the Development of Communication
ISCED	International Standard Classification of Education
ISD	Institute for Strategic Dialogue
ISOC	Internet Society
ITU	International Telecommunication Union
IUI	Internet Universality Indicators
JMSiV	Inter-State Treaty on the Protection of Minors from Harmful Media
JSchG	Youth Protection Act
KFN	Criminological Research Institute of Lower Saxony
KfW	German state-owned development bank
KJM	Commission for the Protection of Minors in the Media
KMK	German Standing Conference of Ministers of Education and Cultural Affairs
KUG	German Art Copyright Act
LBTI	Lesbian, bisexual, transsexual or intersexual
LTE	Long Term Evolution, fourth generation mobile phone network standard
MarkenG	German Trademark Act
MdB	Member of the Bundestag
MOOC	Massive Open Online Course
MSiV	Inter-State Treaty on Media
NAP	National Action Plan for Business and Human Rights
NetzDG	Network Enforcement Act
NIS	German Act to Implement the European Directive Ensuring a High Level of Security Network and Information Systems
NPM	National Platform Future of Mobility
NRI	Network Readiness Index
ODA	Official Development Assistance

OECD	Organization for Economic Co-operation and Development
OER	Open Educational Resources
ÖGD	Public Health Service
OLG	Higher Regional Court
OSI	Online Services Index
OVG	Higher Administrative Court
OZG	German Online Access Act
PAngV	Price Indication Ordinance
PIR	Public Interest Registry
RIPE	European IP networks
RIR	Regional Internet Registry
RSIV	Inter-State Treaty for Broadcasting and Telemedia
SCC	Standard Contractual Clauses
SDG	Sustainable Development Goal
SigG	German Digital Signature Act
SigVO	German Digital Signature Ordinance
SME	Small and Medium-sized Enterprise
SOG	Protection of Public Safety and Order Act
STEM	Science, Technology, Engineering and Mathematics
StGB	German Criminal Code
TII	Telecommunication Infrastructure Index
TFEU	Treaty on the Functioning of the European Union
TKG	German Telecommunications Act
TMG	German Telemedia Act
UMTS	Universal Mobile Telecommunications System
UN	United Nations
UN DESA	Department of Economic and Social Affairs of the United Nations
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UrhG	German Copyright Act
UWG	German Act against Unfair Competition
VCV	CERT Management Association
VDG	German Trust Services Act
VPN	Virtual Private Network
VuMA	Consumer and Media Analysis
VwVfG	Administrative Procedures Act
VZG	Census Act
WBGU	German Advisory Council on Global Change
WEF	World Economic Forum
WLAN	Wireless Local Area Network
WSIS	World Summit on the Information Society
ZAC-NRW	Central Agency and Contact Point for Cybercrime in North Rhine-Westphalia
ZIT	Central Agency for Combating Internet and Computer Crime

Executive Summary

An analysis based on the UNESCO Internet Universality Indicators (ROAM-X)

UNESCO's position on Internet issues has been guided, since 2015, by the concept of Internet Universality. At its core is an Internet where human rights are respected, protected and guaranteed through the creation of national Internet policies that promote the development of knowledge societies and are based on sustainable digitalisation and digitalised sustainability.

UNESCO has defined the principles that underpin its Internet Universality concept and these are known as the ROAM-X principles. These advocate for an Internet that is based on Human Rights, that is Open and Accessible to all and is designed and developed with Multi-stakeholder participation.

An assessment of the state of the Internet on the basis of the ROAM-X principles is essential if progress is to be made in the development of a national digital policy. This basis provides a holistic tool for the assessment of the Internet development level and thus allows evidence-based policy improvements to be made. These can, in turn, foster Internet Universality as a positive factor for sustainable development.

Project team

Professor Dr. Wolfgang Schulz is Director of the Leibniz Institute for Media Research | Hans-Bredow-Institut (HBI), Director of the Humboldt Institute for Internet and Society (HIIG) and Professor of Public Law and Media Law at the University of Hamburg. **Professor Dr. Matthias C. Kettemann**, is Research Programme Head at the HBI and Professor of Innovation, Theory and Philosophy of Law at the University of Innsbruck, and Research Group Head at the HIIG. **Dipl.-Soz. Hermann-Dieter Schröder** is Senior Researcher at the HBI. **Ass. Jur. Anna Sophia Tiedeke** and **Martin Fertmann** are Junior Researchers at the HBI. **Katharina Mosene, MA** is an expert in research cooperation and strategy at the HBI and the HIIG. **Corinna Endreß** is an intern at the HBI and **Julius Böke, Linda Schleif** and **Anna Zapfe** are student assistants at the HBI.

Leibniz Institute for Media Research | Hans-Bredow-Institut

The Leibniz Institute for Media Research | Hans-Bredow-Institut (HBI) researches media change and the related structural shifts in public communication. It combines basic research and research on knowledge transfer from cross-media, interdisciplinary and independent scholarly perspectives. Thus, the Institute is a valued provider of problem-specific knowledge for policy, economy and civil society.

This problem-oriented research includes a special interest in the respective 'new' media where the Institute is eager to make a contribution to their understanding and design. The Institute combines conducting long-term investigations based on research fundamentals with practice-oriented expertise in the service of policy, economy and civil society. The HBI's work is always committed to the standards of excellence in research and the principle of the independence of research.

In its research, the Institute combines a variety of research disciplines. The focus is on the perspective of an empirically underpinned social science and a legal analysis oriented towards regulatory processes. The combination of these two perspectives is one of the special characteristics that distinguish the Institute from other research organizations in Germany and abroad.

International comparative research is of increasing importance for the Institute. The Institute is increasingly establishing itself as a hub in an international network of research organizations with its cooperation projects at European and global levels, the exchange of researchers as well as international conferences and specialist events.

Executive Summary

This report presents the findings of the application to Germany of the Internet Universality Indicators, developed by UNESCO with a view to promoting inclusive knowledge societies¹; the research and analysis for this report was carried out in December 2020 by a team at the Leibniz Institute for Media Research | Hans-Bredow-Institut. The report contains the findings for all the core indicators proposed by UNESCO as well as for the contextual indicators.

The evaluation followed a multi-stakeholder approach and was based on the UNESCO evaluation guidelines. The process was reported on at various stages at national and international Internet governance events. A multistakeholder advisory board made up of German Internet policy experts provided support in developing the recommendations, which were also discussed in a validation workshop in November 2020.

1 UNESCO (2019a).

The Internet in Germany: a public good, a fundamental right and the backbone of digitalisation

In the country where Gutenberg's letterpress printing technique launched a media revolution, the overall state of the Internet is good. The review of all the key digitalisation categories – rights, openness, access, multi-stakeholder participation and social framework – on the basis of the ROAM-X indicators developed by UNESCO showed a future-oriented evolution. Under the conditions of digitalisation, in 2020, this means that security sensitive Internet access and competence-based confident Internet use are essential and will become increasingly important.

The focus of this research investigation was admittedly 'the Internet' in Germany. However, in the research report, the term has been understood very broadly, in the sense of the ROAM-X principles. There was not merely an examination of the Internet in the narrower sense, such as its stability and Internet access, but also of the change processes - economic, social, cultural, legal and political - that were initiated as a result of the permeation of information and communication technologies into all areas of society, thus, 'digitalisation'. 'Digitalisation' is indeed more than the 'Internet', however, Internet-mediated communication is a key feature of digitalisation.

Despite sensible steps such as creating a digital budget and the publication of the digital dashboard for the implementation of the digitalisation strategy, nevertheless, potential for improvement was still be identified, above all, by improving the coherence of policy development, by coordinating digital support measures and by ensuring the use of the Internet by all people in accordance with fundamental rights.

Some 91% of people in Germany already use the Internet and 16.5 million .de domains have been registered. German policy makers have committed themselves, at the highest level, to the right to Internet access for everyone. Internet access in Germany has been realised, with a few exceptions, on a nationwide basis and is stable and affordable. It should be emphasised that in 2020 there was no network overload at any time during the COVID-19 pandemic, despite the increased telephone use, video conferencing and streaming. Yet, in Germany, too, gender, immigrant backgrounds, non-traditional educational trajectories and employment histories as well as age are powerful factors that jeopardise the full realisation of all human rights on the Internet and through the Internet. We have too few reliable data about those who do not use the Internet, about the use of the Internet by people with immigrant backgrounds and about those who have (often multiple) experiences of discrimination and exclusion in Germany - mediated by the Internet and amplified by the platform logic -, those confronted with 'digital violence' or even with people radicalised on the Internet in offline contexts. A development that is jeopardising both individual rights and social cohesion is the prevalence of hate speech and digital violence on the Internet. This particularly affects women as well as people and groups who have experienced marginalisation.

The full and equal participation of everyone has to be ensured in all areas of activity of government with a digital aspect by using the right tools and measures. This includes being alert to problems with respect to data collection, better promotion of gender sensitive cultural change in the technology industry as well as the structural and substantive expansion of the protection of the fundamental rights of vulnerable groups – especially those who are exposed in multiple ways.

Important legislative amendments in the digital arena relating to the ROAM-X principles result from the need to implement EU law, which is why its effect, especially in the area of media regulations and the governance of intermediaries, is essential. Existing regulations at the European level are also characterised by conceptual dependencies, overlaps and certain contradictions, especially since the 'Internet' regulatory area is affected by various European legal acts.

In the discussion about formulating German digital foreign policy, safeguarding international communication flows and understanding, regardless of borders, so that they are protected, in particular in a way as set the UN civil pact, plays an important role. Germany is making a constructive contribution to the reform processes related to the architectures for digital cooperation and is providing substantial support for global multi-stakeholder-based Internet governance. Germany supports the reform processes related to the architectures for digital cooperation and is one of the largest national supporters of a global, multi-stakeholder-based digital policy and Internet governance.

The comprehensive guaranteeing of cybersecurity internally and contributing to enhancing cybersecurity through responsible state behaviour externally are key state functions that have to be taken seriously by all authorities, especially the judiciary and administration. Particularly in view of the growing differentiation in responsibility for cybersecurity, close interlinking of EU, federal and federal state authorities is just as important as clarifying the lines of responsibility within the national cybersecurity architecture.

A properly understood digitalisation policy can make an important contribution to securing people's livelihoods and, with the appropriate democratic control, safeguarding individual spheres of freedom as well as strengthening the cohesion of societies. Beyond the 2030 target year of the UN sustainability goals, digitalisation should be put at the disposal of sustainability across all policy areas.

R - Rights

Digitally relevant fundamental and human rights are protected by German authorities and courts on the basis of the Basic Law and European and international human rights. The German Network Enforcement Act (NetzDG) - the first piece of legislation worldwide enacted to regulate the content governance practices of platforms - was perceived internationally as a significant legal initiative to bind platform content to national law. However, it also raised serious European and constitutional concerns and was imitated in countries where the rule of law is considered to be

significantly less robust. In any case, a mandatory human rights impact assessment (including the consequences of a possible role model function for other states) as part of the digital legislative process seems desirable.

O - Openness

Germany has earned a place among the top ten countries in the Network Readiness Index. This index measures the innovative use of information and communication technology (ICT) by countries, although the favourable ranking was also achieved through Germany's economic strength. Every fifth newly founded company has strong digital relevance. However, there is a lack of meaningful figures on digital accessibility. The teaching of digital skills is now a part of education programmes. The federal structure can open up space for experimental work here. With its E-government Act, Germany has taken another step towards transparent government activity and open data.

A - Access

According to various sources, between 91% and 94% of households in Germany use the Internet. In the group of young adults (16–24 years), almost 100% now use the Internet. In an international comparison, the costs of Internet access are still high in terms of household income, but have recently fallen. Broadband expansion in Germany is clearly lagging behind when compared internationally. Although the speed of Internet connections in Germany has doubled overall in the past three years, there are still regional differences in relation to rural regions, the eastern federal states and small towns.

There are large differences regarding Internet use with regard to employment - some 96% of Germans who have jobs use the Internet compared to only 68% of the unemployed. Education is also important – 96% of Germans with a higher level of education are online, in contrast to this only around 60% of Germans with a low level of education are online. The Federal Government has committed itself to ensuring that everyone can connect to the Internet anytime and that their fundamental right to privacy protection is respected. The basis for this was provided by the coalition agreement of 2018, including the plan to create a legal right to nationwide access to high-speed Internet by 2025. More data needs to be collected on the issues of which particular challenges arise when people with an immigration background use the Internet, and how the advantages of using the Internet independently and on the basis of skills could be conveyed to people who are not yet online.

M - Multistakeholder

Germany is effectively helping to shape the guidelines of future Internet governance internationally and is constantly and strategically advocating Internet governance based on the multi-stakeholder

approach. The Federal Government is committed to actively involving interest groups in the development of national Internet guidelines and Internet-related legislative projects; however, the interaction is not systematic; moreover, short deadlines for comments are counterproductive. Comprehensive consultation procedures and the digital summit are welcome, as are ad hoc participation models conducted by citizens. Most recently, the Federal Government organised the successful Internet Governance Forum 2019, in Berlin, and successfully endeavoured to integrate operators such as medium-sized enterprises that are not as strongly represented in digital policies.

X - Cross-cutting Issues

Making the effects of digitalisation and the use of algorithmic systems non-discriminatory and, thus, helping to reduce gender inequalities is a key goal of the Federal Government. Greater efforts are needed to identify potentials for more intersectional consideration of discrimination factors and, particularly, the access, use and rights of people with physical and cognitive disabilities. Measures must also be taken here, including at the European regulatory level, to ensure transparency and accountability. Women are underrepresented in ICT and Internet-related leadership positions. Increasing the collection of disaggregated data would be beneficial for dealing with not just gender-specific hate speech but also the set of issues related to digital violence in a way that is sensitive to fundamental rights. Collecting such data would also facilitate a better digitalisation policy approach to the specific challenges of integrating people with an immigration background and people who do not use the Internet. Greater participation of groups and genders historically less strongly represented in the technical community in the development of IC technologies and products is also crucial for the further development of ICT in Germany that is sensitive to fundamental rights and non-discriminatory.

The most important recommendations for a sustainable digitalisation policy and a policy of sustainable digitalisation

The 'Internet' policy field is firmly anchored in German politics. Digital policy is increasingly perceived as a task for all societal creative forces. Important agendas relevant to digitalisation are the responsibility of different ministries. This requires the mutual recognition of the role and importance of different specialist policies, such as those for the network and media, the economy and industry, education, integration and culture (each with their own operators, instruments and logics) for sustainable digitalisation within the framework of a coherent digitalisation policy in Germany. Therefore, it makes sense to transition from various Internet policies (or policies with relevance for the Internet) to a cross-disciplinary, sustainable digitalisation policy; yet, at the same time, this needs to be a policy that is sustainable, protects fundamental rights, promotes cohesion and drives innovation.

Key Policy Recommendations

Government

- Implementation of the coalition agreement with the plan to create a legal right to nationwide access to high-speed Internet by 2025 and the implementation of the requisite infrastructure measures, possibly in cooperation with the private sector
- Design and implementation of measures to overcome the 'digital divide' in Internet use between Germans with a job (96%) and the unemployed (68%) and to counteract differences due to educational backgrounds
- Ongoing special consideration of the interests and needs of intersectionally² discriminated groups in national digital political strategies, especially regarding the use of algorithmic systems
- Greater promotion of Internet use by people with an immigration background on the basis of reliable data collection
- Promotion of comprehensive equal treatment of girls and women in all areas of the Internet, from ICT education and the promotion of the learning of STEM subjects to the provision of tools to combat discrimination and exclusion on the Internet, also with regard to 'digital violence'
- Investments in the technical and personnel requirements for the digitalisation of schools, with due regard for educational federalism, in particular through the impact-oriented application of the 'DigitalPact School'
- More systematic promotion of openly licensed teaching and learning resources (OER) through prioritisation within the framework of political and regulatory framework processes
- Increased and systematic promotion of ICT-related teacher training
- Expansion of digital administrative services as part of the implementation of the Online Access Act and promotion of digital innovations in administration
- Enforcement and evaluation of existing transparency and moderation obligations of companies while taking into account the recommendation of the Council of Europe on the role and responsibility of states and Internet intermediaries (2018)
- Increased involvement of civil society and academia in public consultations, workshops and working groups on digital policy issues, setting appropriate deadlines and promoting academic access to public and private data as a basis for science-based policy

2 The term intersectionality is understood to mean the way various structural categories that generate inequality are linked and affect each other; associated structural categories are: gender, ethnicity, class, nationality, sexuality, age, etc.

- Introduction of a mandatory human rights impact assessment as part of the legislative process for digital issues and subsequent regular evaluation of the legislation
- Further engagement in international cooperation formats within the framework of a digital policy based on human and international rights and committed to the principles of multi-stakeholder governance

Judiciary

- Realisation of the right to Internet access by upholding the relevant case law, which sees Internet access as a prerequisite for full participation in the social communication structures of society
- Expansion of the Internet-related training modules in training all those involved in the judicial sector
- Special consideration of the dangers and manifestations of digital violence during training for all levels of use of the judiciary
- Taking into account the goal of the greatest possible 'compatibility' for the legal systems to ensure global accessibility within the scope of legal leeway when deciding on the extraterritorial effects of judgments (for example, by paying due regard the instruments of the Internet Jurisdiction Network)
- Development of cyber forensics capabilities in all areas of the judiciary
- Increasing the number of prosecutors specialising in cybercrime
- Putting in place dedicated officers for hate speech (and digital violence) at the Public Prosecuting Agencies

Private Sector

- Implementation of the existing transparency and moderation obligations, depending on the size of the platform, paying due regard to the recommendation of the Council of Europe on the role and responsibility of states and Internet intermediaries (2018)
- Greater involvement of stakeholders to raise awareness of the impact of design features and user management of the products and platforms that are provided, as well as the involvement of private application partners in applied research on digital sovereignty in human-technology interaction
- Securing the highest possible level of protection for data while taking due account of European legal developments
- Protection of employee rights in the structural change processes that are driven by digitalisation

- Overcoming the underrepresentation of women in the STEM area and targeted involvement of all genders in the development of ICT

Technical Community

- Development of Internet access alternatives for people with special access needs or with non-linear educational and employment biographies
- Strengthening cooperation with schools to highlight IT as a separate subject in addition to the cross-sectional treatment of digitalisation
- Optimisation of apps and websites with a view to cross-generational usability
- Providing technical solutions to achieve the highest possible level of privacy protection in the development of technical standards and products
- Greater involvement of groups and genders historically less represented in the technical community in the development of IC technologies and products

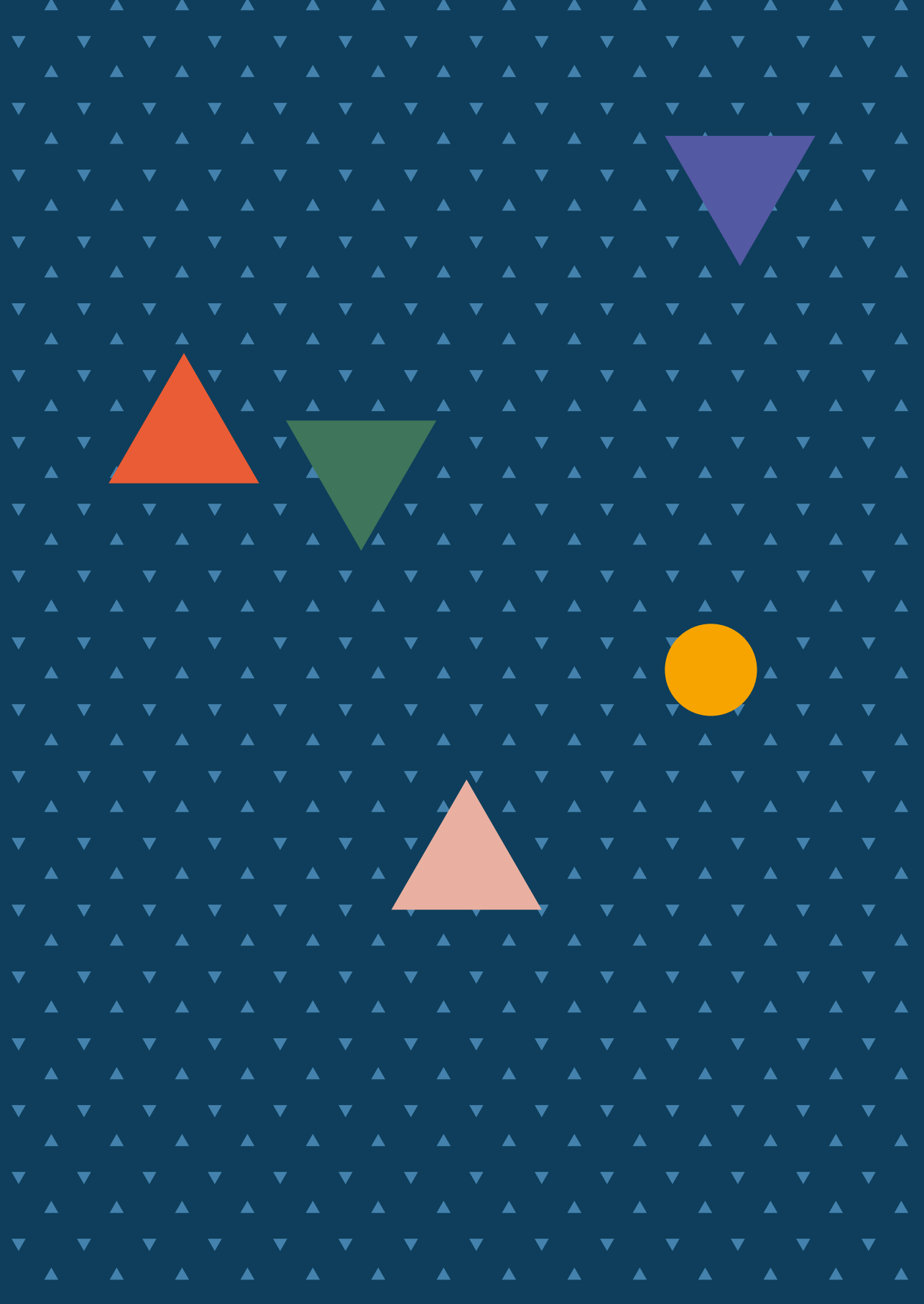
Civil Society

- Use of the increased opportunities for participation through Internet activism, e.g., through online participation of the population
- More conscious engagement of civil society organizations at local and regional levels beyond specifically 'digital policy' organizations in order to understand the value and effect of digitalisation on and for civil society engagement in all its ramifications
- Expansion of the offering for children and parents to minimise risks related to content and interaction as well as commercial risks online, but also to deal with problematic user-generated content and to self-regulate the duration of use

Academia

- Development of meaningful human rights assessment methods in order to implement procedures for assessing human rights impacts
- Continuation and stepping up of the critical monitoring of network policy and digital legislation at national and European levels, including the development of specific options for action
- Development and reinforcement of transfer research formats to optimise the 'translation' of academic knowledge in a way that is tailored to recipients
- Entering a process of self-reflection about the extent to which the visibility and acceptance of open access can be increased in the entire German academic system

- Collection of valid figures and statistics on, among other things, digital violence using diversity-sensitive categories and being aware of intersectional relationships and exclusion systems
- Formulation of target group and risk-specific approaches to help children and adolescents leverage the potential of the Internet and to provide them and their parents with a healthy understanding of risk



1

INTRODUCTION

Background of the UNESCO Internet Universality Concept and Indicators project

In 2013, UNESCO initiated research consulting activities that led to a debate on the concept of Internet Universality. The aim was to identify those aspects of the Internet that are of fundamental importance for realising the Internet's potential for developing knowledge societies and the achievement of sustainable development.

The concept was based on four principles that structure the main pillars that underlie the growth and development of the Internet. They are seen as fundamental to the development of the Internet in a way that helps facilitate the achievement of the Sustainable Development Goals. These principles are: R – that the Internet is based on human rights, O – that it is open, A – that it is accessible to all and M – that it is developed with multi-stakeholder participation. This concept³ was approved by the UNESCO General Conference in 2015 and served as the basis for creating indicators suitable for measuring the universality of the Internet. The context was the need to strengthen these principles as the Internet increasingly became directly integrated into all human affairs. The indicator framework was developed in an open and participatory process. This resulted in 303 indicators broken down into the four categories listed above, as well as one overarching category and one chapter with contextual indicators. 109 of the 303 indicators are considered to be 'core indicators', a selective set that enables them to be used in contexts where time as well as human and financial resources are limited.

Both the full set and the core set include quantitative, qualitative and institutional indicators. The indicator framework has been designed so that it can be applied at the country level by conducting specific research on the concept of the universality of the Internet. This framework is designed to support governments and stakeholders who wish to voluntarily evaluate their national Internet environment to facilitate the formulation of evidence-based public policy.

Development process for the indicator framework

In April 2017, a consortium led by the Association for Progressive Communications (APC) was commissioned as part of a global tender process to work together with UNESCO on the development of the indicators. In addition to the APC, this consortium also included ict Development Associates and two regional ICT research institutes, namely, LIRNEasia and

3 UNESCO (2019a).

Research ICT Africa. UNESCO appointed a multi-stakeholder advisory board made up of 15 people from different regions with special expertise in various aspects of the Internet as well as stakeholder communities who provided advice on the implementation of the project. The UNESCO Institute for Statistics provided additional support and advice. The Organization for Economic Cooperation and Development (OECD) was also approached for its suggestions.

The project was developed in three phases: research, advice and validation. The first phase involved the preparation of a draft indicator framework and set of indicators; these were explained in the document 'Defining Internet Universality Indicators', which was published online and offline in December 2017. Six main criteria, which were based on UNESCO's previous experience with indicators, were considered in this phase:

- that indicators should be chosen where measurement data are sufficiently reliable in quality to permit confident interpretation;
- that the indicators selected should be quantitative where possible and qualitative where appropriate;
- that they should be independently verifiable where possible;
- that they should, where possible and relevant, allow for disaggregation by sex, age group, locality and other population characteristics; and
- that it should be possible for the necessary data or information to be gathered, at reasonable cost in time and money, in the majority of countries.

A second consultation process took place from 1 December 2017 to 18 May 2018, which allowed all stakeholders to respond to this framework and the draft of the indicators. The governments of the member states, international organizations and associations with a particular interest in the Internet were again expressly invited to participate.

The draft of the indicators was revised in light of contributions made during this consultation process. In the third phase, in May 2018, feasibility assessments of the revised draft indicators were carried out in four countries – Brazil, Ecuador, Nigeria and Pakistan. These studies considered the feasibility of obtaining evidence to assess each of the indicators included in the framework and how the framework could be implemented in pilot countries.

Between July and September 2018, partial pilot programs of the indicators were carried out in Brazil, Senegal and Thailand, where the actual evidence was examined. On 21 November 2018, the 31st session of UNESCO's Intergovernmental Council of the International Programme for the Development of Communications (IPDC) 'welcomed the Internet Universality indicators framework' and 'endorsed the use of this tool on a voluntary basis as a useful resource available for Member States'. The Council also encouraged 'interested Member States and all stakeholders to voluntarily support and conduct national assessments of Internet development using the Internet Universality Indicators' and to 'use the research results for evidence-based policy discussions and recommendations.'

The initiative in Germany

Germany participated in the indicator development process already through the Technical Committee for Communication and Information at the German Commission for UNESCO, which is chaired by Professor Dr. Wolfgang Schulz. In June 2020, the German Commission for UNESCO selected the Leibniz Institute for Media Research | Hans-Bredow-Institut, headed up by Professor Schulz, to prepare an assessment report for Germany based on the Internet Universality Indicators. After the indicators had been translated into German, a team led by Professor Schulz, Professor Dr. Matthias C. Kettemann and Dipl.-Soz. Hermann-Dieter Schröder carried out the indicator research investigation. The recommendations based on this were then discussed at a national validation event and finalised by the end of December 2020. The findings from the research investigation of the national state of the Internet, which was based on the Internet Universality Indicators, have made it possible to identify gaps in Germany's digitalisation policy and to formulate recommendations for specific improvements.

Methodology

The research for this report was carried out between May 15 and August 17, 2020 by the Leibniz Institute for Media Research | Hans-Bredow-Institut in Hamburg. A revision was carried out in October 2020. Some of the last follow-up data was collected in December 2020. The method was based on UNESCO's recommendations for data collection on the Internet Universality Indicators. Accordingly, hardly any primary data was collected, instead, available knowledge (and data) about the development of the Internet in Germany were compiled and evaluated according to 21 contextual indicators and 109 core indicators.

The key sources were initially official statistical data and publications on government regulation. These were supplemented by numerous publications by policy and economic institutions and by published research findings. In the case of indicators for which only insufficient information could be obtained in this way, further information was collected by enquiring at government and private bodies.

The research and evaluations were carried out on an interdisciplinary basis. Legal experts were consulted primarily for the indicators on applicable legal norms and their implementation as well as for aspects of self-regulation. Expertise from the areas of political science and sociology was also incorporated in other thematic fields.

To avoid errors, the research was carried out according to the dual control principle. All findings were researched by two people and checked for plausibility; the specified online sources were checked again on October 18, 2020. All sources used are listed in this report.

Structure of the Report

The report is structured around the framework of the Internet Universality Indicators.

This covers the four ROAM principles, with the addition of cross-cutting indicators that address gender and the needs of children, sustainable development, trust and security, and legal and ethical aspects of the Internet. Together they form the framework for the ROAM-X indicators. In addition to the ROAM-X indicators, this report assesses a number of contextual indicators that deal with the demographic, social and economic characteristics of the country and that are intended to contextualise the findings in the report with regard to the conditions in Germany.

Categories. The overall report is divided into five categories, which include the four ROAM principles together with the category of cross-cutting indicators (X).

Themes. Each of the categories of the ROAM-X indicators is divided into a number of themes. There are six themes in R and A categories, five themes in O and X categories and three themes in the M category.

Questions. A number of questions are set out within each theme. These relate to the specific points on which national performance is to be assessed and on which evidence is to be used for the assessment.

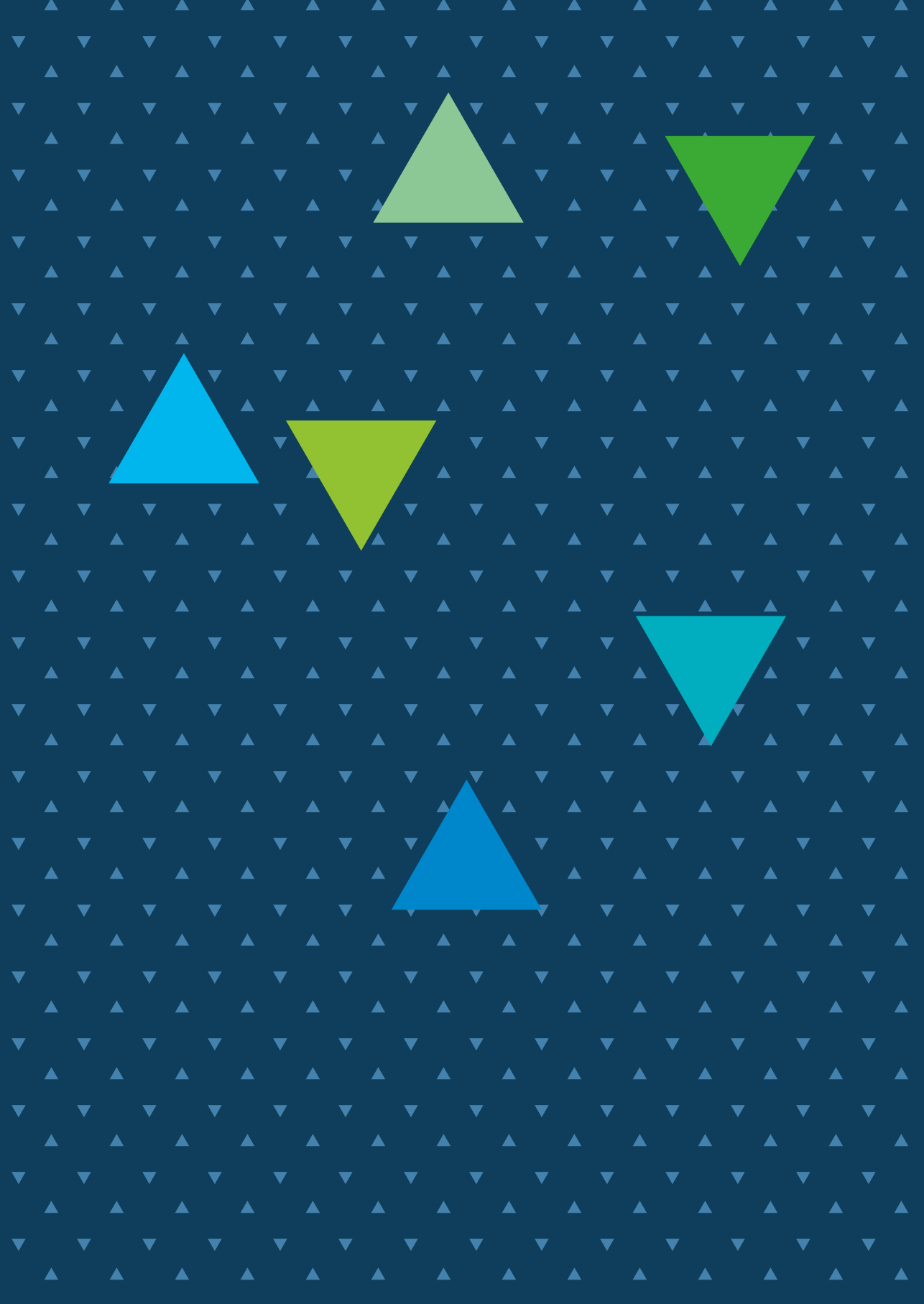
The indicators. UNESCO has specified one or more indicators for each question. These indicators provide the evidence base for the assessment of the question. The final IUI framework contains 303 indicators, including 109 core indicators, spread across six categories, 25 themes and 124 questions. In addition to the four ROAM categories, 79 cross-cutting indicators address issues relating to gender equality and the needs of children and young people, sustainable development, trust and security, and legal and ethical aspects of the Internet. The 109 core indicators plus 21 contextual indicators proposed by UNESCO were chosen for this report.

Findings for the indicator. Each of the categories contains the findings for the core indicators.

Recommendations. Each of the categories contains policy recommendations for different stakeholders that are summarised at the end.

Conclusions and recommendations on the key priorities, by stakeholder.

The conclusions drawn from the findings for each category have been summarised and priority key recommendations have been formulated in relation to each group of stakeholders to guide their future actions.



2

CONTEXTUAL INDICATORS: **FINDINGS**

The contextual indicators are essential background for applying the indicators of the subsequent categories. They shed light on the economic situation of Germany, its gross national income and growth rate. Demographic indicators help understand how the population develops, its age structure, linguistic variety, and schooling. Development indicators provide context with regard to adult literacy rates and the level of human development. Equality indicators help understand whether a country has a prima facie equality problem that might influence how other indicators are analysed. Governance indicators help understand the situation regarding the rule of law and good governance. Finally, ICT development indicators help understand in a global perspective the situation regarding the development of ICTs in Germany. Indexes on mobile connectivity, network readiness and e-commerce serve to provide further background knowledge necessary to situate and contextualize the results of the application of the indicators in the subsequent chapters.



ECONOMIC Indicators

- A. **Gross National Income (GNI) (purchasing power parity) per capita**
- B. **GNI growth rate over the past ten years**
- C. **Proportion of GDP attributable to services**

The gross national income (GNI) describes the sum of the income generated by the population of a state within a year, regardless of whether it was generated domestically or abroad. On a per capita basis this has risen steadily in Germany over the past ten years; this holds true when measured in euros and, after adjusting for purchasing power, in US dollars in 2017. The last time there was a decline was in 2009, due to the financial crisis. The service sector, at around 62%, has, for a long time, accounted for the largest share of gross domestic product (Table 1).

Table 1: Development of gross national income in Germany

Year	GNI per capita, in Euro ^{a)}	GNI per capita, adjusted for purchasing power, in US dollars 2017 ^{b)}	GNI per capita, change compared to previous year in percent ^{c)}	Share of gross domestic product of service sector in percent ^{d)}
2009	31,078	45,989	-4.2	64.2
2010	32,582	47,860	4.1	62.3
2011	34,413	50,931	6.4	61.8
2012	34,954	50,969	0.1	61.7
2013	35,668	51,010	0.1	62.2
2014	36,873	51,776	1.5	62.1
2015	37,938	52,371	1.1	62.2
2016	38,996	53,213	1.6	61.8
2017	40,263	54,368	2.2	61.8
2018	41,468	55,155	1.4	61.8
2019	42,545	No data available yet	No data available yet	62.4

Sources:

^{a)} Federal Statistical Office (2020e).

^{b)} World Bank (2020d).

^{c)} Ibid., line 281.

^{d)} Ibid., line 1094.



DEMOGRAPHIC Indicators

A. Overall population size and growth trend

Since 1950 the population in Germany has grown from 70 million people to almost 84 million people.⁴ In the Federal Republic of Germany (FRG) the population grew between 1950 and 1990 from 50.3 million in 1950 to 61.5 million in 1990, while the population of the GDR decreased from 18.4 million to 16.1 million in the same period.⁵

⁴ UN Department of Economic and Social affairs (2019a).

⁵ Proportions of world population (2000).

An increase in the population for the entire area of what is now Germany from 1980 and again from 2011 cannot be attributed to an increase in births, or a higher birth rate than death rate.⁶ In fact, migration has been a key factor in this respect and, since 2015, particularly of refugees. The trend towards more and more immigrants to Germany since 2006 (661,855) peaked in 2015 at 2,136,954 immigrants. Since then, there have been more than 1,500,000 immigrants per year up to 2019, but also a considerable number emigrants so that, on balance, there have been migration gains of between approx. 300,000 and 500,000 people.⁷

B. Average life expectancy at birth, disaggregated by sex

Life expectancy for newborns in Germany has increased from 77.9 years in 2000 to 80.9 years in 2018.⁸ Compared to males, female newborns have a significantly higher life expectancy of 83.3 years to 78.6 years; however, the difference between male and female newborns has decreased from 6.0 years in 2000 to 4.7 years in 2018.⁹

C. Proportion of children, young people, people of working age and older people

Germany's population structure, which was still relatively young in the 1960s – characterised by the very high birth cohorts between 1963 and 1969 – has increasingly given way to an older population structure. Due to the low birth rate, there were comparatively few children, adolescents and young adults in 2020 with 15.3 million people under the age of 20 compared to 16.2 million people who were over 67 years old.¹⁰

The fact that the demographic change towards an aging society is not becoming even more pronounced is also due to the fact that since, 2015, the proportion of asylum seekers who are under 25 has been more than 50% of the total number of asylum seekers. The proportion of children and young people aged 0 to 15 among asylum seekers rose from 26% in 2015 to 47% in 2019.¹¹

D. Linguistic variety

Germany is a country that is strongly influenced by migration. The share of people with an immigration background in the total population was 26% in 2019.¹² This, of course, also pays off in terms of linguistic diversity: a language other than German was predominantly

6 UN Department of Economic and Social Affairs (2019b).

7 Federal Statistical Office (2019g).

8 World Bank (2020d), line 421, Code SP.DYN.LE00.IN.

9 Ibid., line 774, code SP.DYN.LE00.MA.IN, and line 70, code SP.DYN.LE00.FE.IN.

10 Federal Statistical Office (2020c).

11 Federal Agency for Civic Education (2020).

12 Federal Statistical Office (2019b).

spoken in 9.7% of the total German households. The most common languages spoken in these households were Turkish, Russian, Polish or Arabic.¹³

Other European languages account for 21% of households where German is not the main spoken language, here we mainly see English, Italian, Spanish, and French.¹⁴ (See also Indicator 85, Table 11)

Within Germany according to Section 23 (1) of the Administrative Procedures Act (VwVfG), German is the official language and according to Section 184 of the Code on Court Constitution (GVG) is the official language of the courts.

There are also regional and minority languages in Germany. Low German or Plattdeutsch is the largest minority language with 2.5 million speakers.¹⁵ Frisian, which is divided into North Frisian with 8,000–10,000 speakers and Sater Frisian with 1,000–2,000 speakers, is mainly spoken in the north and northwest of Germany. In addition, there is the recognised minority language Lower Sorbian in Brandenburg, which has 7,000–10,000 speakers, and the minority language Upper Sorbian, which is recognized in Saxony and is spoken by 20,000 people in Upper Lusatia.¹⁶

Romany is a minority language that is spoken not just in Germany and has been protected as a minority language with 200,000 speakers since the European Charter for Regional and Minority Languages came into force in 1999.¹⁷ A special feature in the network of regional and minority languages is the Danish language, which is spoken by 50,000 people in Schleswig-Holstein. The SSW is a political party that also represents the Danish minority in Schleswig-Holstein's state parliament.¹⁸

E. Degree of urbanization

The degree of urbanisation¹⁹ in Germany has been increasing slowly but continuously for years. In 2000, the degree of urbanisation was still 75%, it subsequently rose to 77.3% by 2018.²⁰ According to a forecast by the UN DESA (Department of Economic and Social Affairs), this trend will continue and will result in an increase of the degree of urbanisation in Germany to 84.3% by 2050.²¹

13 Federal Statistical Office (2018), Table 18.

14 Ibid.

15 German Bundestag (2016).

16 Ibid.

17 Ibid.

18 For parties of the Danish minority, the special regulation in Section 3 of the Schleswig-Holstein State Election Act applies. According to this, the parties do not have to get five percent of the second votes cast in order for their candidates from their state lists to be elected to the state parliament; see regional court Schleswig-Holstein (2020).

19 At this point, the degree of urbanization means the proportion of people living in urban areas in relation to the total population.

20 World Bank (2020c).

21 UN Department of Economic and Social Affairs (2018b).



DEVELOPMENT Indicators

A. UNDP Human Development Index (HDI)

The HDI value of 0.939 means that Germany has achieved a very high level of human development; it has only been exceeded by three other countries worldwide.²² In the period from 1990 to 2019, the value increased by 17.2%. There was a significant increase, especially up to 2010, to a value of 0.92; since then it has only increased slowly.²³

B. Mean years of schooling and proportions of appropriate age groups in primary, secondary and tertiary education, disaggregated by sex

The average time taken for personal education (ISCED – International Standard Classification of Education, 1 or higher²⁴) decreased from 14.4 years in 2004 to 13.7 years (2008), but increased again after 2008 to 14.2 years in 2018. In all the recorded years (2004–2018) education lasted longer for men than for women. However, this gap between the sexes has been decreasing in recent years. In 2018, there was only a difference of 0.7 years compared to 1.2 years in 2004.²⁵

Table 2: Education by gender

	Primary (ISCED 1)	Lower secondary level (ISCED II)	Upper secondary level (ISCED 3)	Post-secondary, non-tertiary sector (ISCED 4)	Short-cycle tertiary education (ISCED 5)	Bachelor's or equivalent (ISCED 6)	Master's or equivalent (ISCED 7)	Doctorate or equivalent (ISCED 8)
Male	3.4%	9.6%	49.2%	7.6%	0.7%	17.4%	10.3%	1.7%
Female	3.9%	16.0%	46.4%	12.0%	0.5%	10.6%	9.6%	0.9%
Total	3.7%	12.8%	47.8%	9.8%	0.6%	13.9%	9.9%	1.3%

Source: UNESCO Institute for Statistics, <http://data.uis.unesco.org/Index.aspx?queryid=242#0>

The table records the minimum educational qualification achieved by adults over the age of 25 in Germany in 2020. It shows that the proportion of male graduates is significantly higher than

22 UN Development Program (2019a).

23 UN Development Program (2019a), p. 3.

24 ISCED = International Standard Classification of Education; ISCED 1 and above is the primary level and all levels above.

25 UNESCO Institute for Statistics (2020).

the proportion of women at the higher educational levels from ISCED 6. Overall, almost half of the population (47.8%) have a higher school leaving certificate. The proportion of people who only have a primary school leaving certificate is relatively low at 3.7%.²⁶

C. Adult literacy rate, disaggregated by sex (and language where appropriate)

As far as the literacy level of the population is concerned, figures from 2010 and 2018 are available for Germany. According to these, there were 6.2 million people aged 18–64 with limited literacy in 2018, which corresponds to a decrease of 2.4 percentage points compared to 7.5 million with limited literacy in 2010. Overall, the proportion of adults with limited literacy was 12.1% in 2018.²⁷

The majority (58.4%) of the less literate adults in Germany are men.²⁸ In addition, almost half (47.4%) of those with limited literacy in Germany grew up with a mother tongue other than German.²⁹

D. Proportion of the population covered by the electricity supply

The electrification rate among the population has been 100% since the data started to be collected, in 1990, because Germany, as an industrialised country, has been electrified across the board for a long time.³⁰



EQUALITY Indicators

A. GINI coefficient

The GINI coefficient, which is used as an indicator of inequality among a country's population,³¹ was calculated at 0.31 for the distribution of income in Germany in 2018.³² However, this

26 UNESCO (2020).

27 University of Hamburg (2018). Low literacy in this context means that there are skill deficiencies in relation to the Alpha I-III levels. Based on this classification, the proportion of adults at Alpha I level is very low at 0.6% of all adults in Germany. 3.4% of adult Germans are at the Alpha II level and 8.1% are at the Alpha III level.

28 Ibid., p. 7. The deviation from 100% is due to rounding.

29 Ibid., p. 9 f.

30 World Bank (2020a); Index mundi (2019).

31 The GINI coefficient is a measure between 0 and 1 used to measure the inequality of a distribution. The more uneven the distribution, the closer the value is to 1. Where there is equal distribution, the GINI coefficient is 0.

32 Eurostat (2019c).

comparatively low value in relation to the entire international community is put into perspective by the fact that the wealth inequality in Germany is very pronounced. A [report by the Federal Ministry of Finance](#), from May 2019, showed that, despite the difficulty in measuring wealth inequality, 10% of the population in Germany hold 60% of the net household wealth.³³

Germany also does not fare well in terms of equal opportunities; these are considered to be broad-based where personal performance determines differences in income and its distribution within society and not individual's external criteria, such as the socio-economic position of the parents. Almost 60% of the population have not achieved any educational advancement compared to the highest educational level achieved by their parents.³⁴

B. Gender inequality index

There are also still significant [differences](#) between the sexes with regard to equal opportunities and unequal treatment.³⁵ The [Gender Inequality Index](#) value calculated for Germany, in 2018, was 0.084. On the one hand, this represents a considerable difference to the value of 0.156 from 1995, but on the other hand, it is also a slightly higher value than the one in 2015 and 2016 (0.076).³⁶

There has been a similar development as regards to the [proportion of women in the German Bundestag](#). The proportion grew from 5.8% in 1972 to a record high of 36.3% in the 2013-2017 legislative period, however, currently 30.9% of the members Bundestag are women.³⁷

The fact that women in Germany still experience inequalities at a professional or economic level is manifested in the [gender pay gap](#), which is recorded annually and resulted in a pay gap of 20% for 2019.³⁸ Taking into account the same qualifications and equivalent activities, the so-called [adjusted gender pay gap](#) was last determined in 2014 to be 6%.³⁹

33 Federal Ministry of Finance (2019).

34 Ibid., p. 18.

35 Ibid., p. 20.

36 UN Development Programme (2018).

37 Federal Agency for Civic Education (2017).

38 Federal Statistical Office (2020b).

39 Federal Statistical Office (2017).



GOVERNANCE Indicators

A. Global governance indicators

The six governance indicators that were evaluated here for the years 2008 to 2018 were developed by the World Bank. They rate the quality of governance in the individual categories based on a scale from -2.5 to +2.5, with a higher value indicating a better result.⁴⁰

As the table below shows, there has been an improvement in quality since 2008 in the categories of voice and accountability, government effectiveness, regulatory quality and control of corruption. By contrast, the value for political stability and absence of violence/terrorism declined by 0.6: most of this decrease has occurred since 2014. Then again, the rule of law indicator fell from 94.2 in 2008 to 91.3 in 2018.⁴¹ Collecting data for the rule of law category, within the scope of the governance indicators, primarily relates to the perception of various operators with regard to the extent to which they trust the rules of society and follow these rules.⁴²

Table 3: Development of the governance indicators for Germany 2008-2018

Year	Voice and accountability	Political stability and absence of violence/terrorism	Government effectiveness	Regulatory quality	Rule of law	Control of corruption
2008	93.75	79.81	89.23	92.23	94.23	93.20
2013	93.43	76.30	92.42	92.42	92.02	94.31
2018	95.07	66.67	93.27	94.71	91.35	95.19

Source: World Bank, The Worldwide Governance Indicators, 2019 Update, September 2019, <https://info.worldbank.org/governance/wgi/Home/downloadFile?fileName=wgidataset.xlsx>

B. Rule of law index

Developed by the World Justice Project, the Rule of Law Index is based on eight factors: 1. Constraints on government powers, 2. Absence of corruption, 3. Open government, 4. Fundamental rights, 5. Order and security, 6. Regulatory enforcement, 7. Civil justice and 8. Criminal justice. Each factor is in turn based on further criteria; there is a maximum achievable

⁴⁰ Kaufmann, Daniel/Kraay, Aart (2018).

⁴¹ Ibid.

⁴² Kaufmann, Daniel/Kraay, Aart (2020).

value of 1 and a minimum of 0 for each factor.⁴³ Taken together, the rule of law index value for Germany, in 2020, was 0.84; it has increased slightly since 2015. This puts Germany in sixth place out of 128 countries.⁴⁴

For the 'order and security' factor, Germany ranks 17th with a value of 0.89. Germany scores particularly well when it comes to granting and observing fundamental rights and civil justice, with a value of 0.85 in each category.⁴⁵

C. Doing Business Index

The Doing Business Index compiled by the World Bank is intended to record how easy it is to establish and manage a company or to become self-employed in a country. Values are assigned for various factors. The values for the index range from 0 (non-existent, poor) to 100 (generally prevalent, excellent).

Table 4: Doing Business Index (DBI)

Topic	DBI 2020 rank	DBI 2020 points	DBI 2019 points	Point Difference 2020–2019
Total	22	79.7	79.3	0.4
Starting a business	125	83.7	83.6	0.1
Dealing with building permits	30	78.2	78.2	0
Get electricity	5	98.8	98.8	0
Registering property	76	66.6	66.5	0.1
Getting credit	48	70.0	70.0	0
Protecting minority investors	61	62.0	62.0	0
Paying taxes	46	82.2	82.1	0.1
Trading across borders	42	91.8	91.8	0
Enforcing contracts	13	74.1	70.4	3.7
Resolving insolvency	4	89.8	90.1	-0.3

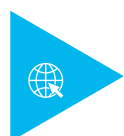
Source: World Bank, Ease of Doing Business in Germany, 2020, <https://www.doingbusiness.org/en/data/exploreconomies/germany>.

43 World Justice Project (2020a).

44 World Justice Project (2020b).

45 Ibid.

With a score of 79.7, Germany is 22nd in the Doing Business Index ranking. Judging by the results of the index, there are a number of hurdles for starting a business in Germany compared with the other countries that were reviewed. Here, Germany ranks 125th out of a total of 190 countries. Then again, the insolvency regulations are rated very highly at a value of 89.8 and ranked in 4th place and getting electricity in 5th place with a value of 98.8.⁴⁶



ICT DEVELOPMENT Indicators

A. ICT Development Index

The ICT Development Index (IDI) was developed by the International Telecommunication Union (ITU) and has been published annually since 2009. It is a composite index that combines eleven indicators into one benchmark measure. It is used to monitor and compare developments in information and communication technology (ICT) between countries and over time.⁴⁷

Due to methodological problems, the IDI has not been published since 2018.⁴⁸ Based on the data that emerged from the last published ICT Development Index for Germany, in 2017, when considered on an international comparison, Germany was in 12th place in the IDI ranking with a value of 8.39. with a value of 8.39.⁴⁹

B. Mobile Connectivity Index

The Mobile Connectivity Index compiled by the GSM Association, measures and tracks mobile Internet connectivity using several indicators; the indicators for Germany were last collected in 2019 and produced an index value of 69 points, out of 120, for Germany. This puts Germany in 15th place out of 79 countries that were reviewed.⁵⁰

With regard to the market penetration of mobile phone connections, Germany achieved a high value of 140%; this means that for every 100 people there are around 140 mobile phone connections. The value for broadband penetration is only slightly lower at 123%.⁵¹ The relatively

46 World Bank (2020b).

47 International Telecommunication Union (2020b).

48 International Telecommunication Union (2020a).

49 International Telecommunication Union (2019a).

50 Global Connectivity Index (2019).

51 GSMA (2019).

low level of 3G coverage that was calculated (95% of the population has access) from the Mobile Connectivity Index is expected to grow further as a result of the 5G expansion together with the 4G network.⁵² [A look at the Digital Economy and Society Index DESI 2020](#) shows that this has already been some success in this respect. According to this Index the 4G coverage of all households increased from 88% in 2017 to 90% in 2018 and by a further 4% in 2019. 5G use (measured as a percentage of the allocated radio frequencies of the total harmonised 5G frequencies) increased from 33% in 2019 to 67% in 2020.⁵³

C. World Economic Forum (WEF) Network Readiness Index

The World Economic Forum [Network Readiness Index](#)⁵⁴ measures the propensity for countries to exploit the opportunities offered by information and communication technology. The report is regarded as a benchmark for the use of the potential of ICT with a view to the competitiveness of national economies.

According to the [Network Readiness Index](#), Germany ranks 9th out of 121 countries examined.⁵⁵ When evaluating Germany's ranking, it must be taken into account that the good ranking is primarily based on the fundamental pillars of economic strength (7th in Outcomes in Economy) and Germany's general contribution to the 17 Sustainable Development Goals (6th in SDG Contribution). Apart from the area of artificial intelligence, where Germany ranks 2nd, the country has weaknesses in the technical areas (access: in 27th place; ICT use by individuals: in 41st place).

There was a need for improvement, particularly in relation to support for setting up new companies, in terms of simplifying the procedure and registration. In the private sector, there needs to be greater fostering of individual use and adaptation of technologies so that society's potential ability to deal with the existing infrastructure can also be used. In addition, the government is still not realising the potential that exists with regard to digital public services.⁵⁶ However, a positive general trend can be identified. For example, the amount of [e-government users](#) has increased by 10% to 49% since 2018. The rating of digital public services for companies has improved to 92 out of 100 possible points.⁵⁷

52 RIPE Network Coordination Centre (2019).

53 European Commission (2020b).

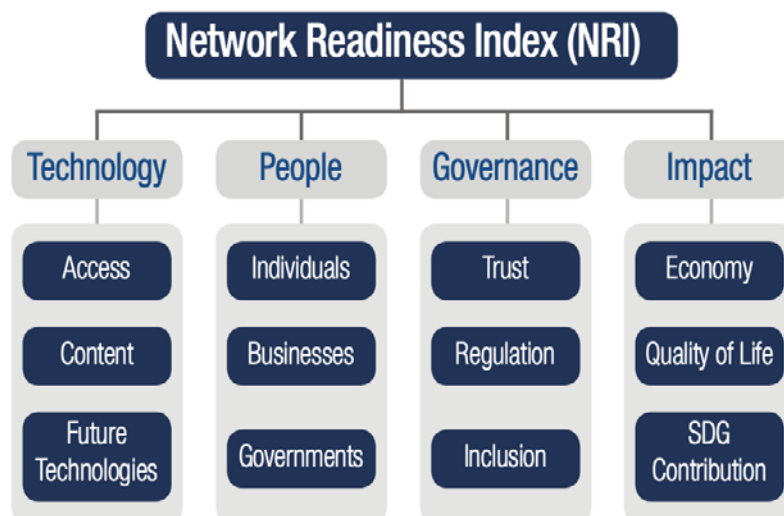
54 World Economic Forum (2018).

55 Portulans Institute (2019).

56 World Economic Forum (2016a).

57 European Commission (2020b).

Figure 1: Network Readiness Index Criteria



Note: SDG = Sustainable Development Goal.

Source: Portulans Institute; WITSA: The Network Readiness Index 2019: Towards a future-ready society, 2019, <https://networkreadinessindex.org/wp-content/uploads/2020/03/The-Network-Readiness-Index-2019-New-version-March-2020-2.pdf>, p. 13.

D. UNCTAD E-Commerce Index

In the E-Commerce Index which is compiled by the United Nations Conference on Trade and Development (UNCTAD) and aims to measure the willingness of an economy to support online purchases; Germany ranks 9th worldwide with an index value for 2019 of 92.9 points; this corresponded to an improvement of three ranking positions or 0.9 index points year on year. The proportion of individuals who use the Internet is 92%, while the proportion of individuals (15 years and older) with a user account is even 99%.⁵⁸

⁵⁸ United Nations Conference on Trade And Development (2019).



R

Rights

3

CATEGORY R
RIGHTS

'Digitalisation is fundamentally changing our society and the life of every individual. That is why it also requires an ethical framework.'

(Frank-Walter Steinmeier, Federal President, 2020)

'Will we succeed in maintaining the Internet as a space for freedom, or will it become an instrument of oppression? Will we manage to organise democracy in the digital age or will the Internet end up becoming a threat?'

(Heiko Maas, Federal Foreign Minister, 2018)

'The Internet is the backbone of digitalisation. The Federal Government protects it as a public good and a fundamental right.'

(Dorothee Bär, Federal Government Commissioner for Digitalisation, 2018)

What determines the legal framework of the Internet and Internet-related social change processes in Germany?

The guarantee of individual rights and freedoms in Germany is rooted in the fundamental rights of the Basic Law. As an objective set of values, these define the constitutional framework for making use of the opportunities for free development and social participation opened up by the Internet, as well as the state's obligations to protect individuals from digital violence and from new forms of discrimination and surveillance. Law and technology work together; technical challenges for society must be intercepted by the law, without the law being allowed to stifle innovation potential.

In addition to these constitutional guarantees, technological developments are linked back to the interests of the individual that are worth protecting through a dense normative environment of federal and state legal requirements and international agreements, which often have the rank of binding federal law in Germany. The challenge of digital policy-making appears in the context of the interplay between law (regulation) and technology.

The core indicators of the rights category show that the freedom-promoting potential of the Internet in Germany is protected by a comparatively large density of legal guarantees and that its tendencies to restrict freedom are successfully contained for the most part. Particularly noteworthy are the positive effects of the strong rule of law in Germany, including the effective protection of fundamental rights, the existing consensus on the validity of fundamental and human rights in online and offline contexts and the binding responsibility assumed by comprehensive obligations under relevant international treaties to ensure the protection of human rights online too.

Against this background, there is less potential for expanding the protection of fundamental and human rights in the area of direct state action, but rather in developing specifications for the actions of influential ICT and Internet companies. In this respect, the overall regulatory environment, including, for example, the civil law liability of platforms that is shaped by European law

and court rulings, is comparatively stable. However, guidelines for mobilising large Internet platforms to act against illegal content, like those in the German Network Enforcement Act, are controversial from a human rights perspective. The discussion of the overarching issue of how to design regulations for the Internet that are sensitive to human rights and facilitate public-private cooperation will therefore have to be continued in the context of the upcoming discussions about a Digital Services Act at EU level.



THEME A

Policy, Legal and Regulatory Framework

RA.1 Is there a legal framework for the validity and enforcement of human rights that is compatible with international and regional agreements, laws and standards as well as the rule of law?

► **Indicator:** *The existence of a constitutional or legal framework, including monitoring procedures that are consistent with international and regional human rights conventions, laws and standards, and evidence that these are respected and enforced by government and other relevant authorities*

Articles 1-19 of the Basic Law (GG) of 1949 provide for comprehensive protection of fundamental rights.⁵⁹ A claim can be made against the violation of these basic rights (specific constitutional law) in Germany (after exhaustion of the legal process) with a constitutional complaint before the Federal Constitutional Court according to Art. 93(1) no.4a GG, Section 13 no. 8a, 90 ff. BVerfGG.⁶⁰

Germany has signed and ratified the European Convention on Human Rights (ECHR) and the additional protocol to the European Convention on Human Rights (ZP I ECHR).⁶¹ The additional

59 Dürig; Maunz (2013).

60 Bethge; Maunz; Schmidt-Bleibtreu; Klein (2020).

61 German Institute for Human Rights (2019), p. 5.

protocol of the ZP I ECHR provides for an individual complaints procedure before the European Court of Human Rights (ECHR). In addition, as an EU member state, Germany is bound by the EU Charter of Fundamental Rights (CFR).⁶² According to the requirements of the Treaty on the Functioning of the European Union (TFEU), individuals can sue before the General Court of the European Union (EGC) and the European Court of Justice (ECJ) for violations of the EU Charter of Fundamental Rights. Since the decision of the Federal Constitutional Court (BVerfG) in 'Right to be forgotten II', a violation of 'EU fundamental rights' can also be examined by way of a constitutional complaint before the BVerfG.⁶³

Germany has signed and ratified the relevant international treaties and most of the additional protocols.⁶⁴ These include:

- the International Covenant on Civil and Political Rights (UN Civil Covenant) and the Second Optional Protocol to the International Covenant on Civil and Political Rights to Abolish the Death Penalty,
- the International Covenant on Economic, Social and Cultural Rights (UN Social Pact),
- the International Convention for the Elimination of All Forms of Racial Discrimination (Anti-Racism Convention),
- the Convention on the Elimination of All Forms of Discrimination against Women (Convention on the Rights of Women) with the Optional Protocol to the Convention on the Elimination of All Forms of Discrimination against Women,
- the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (Anti-Torture Convention) and the Optional Protocol to the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment,
- the Convention on the Rights of the Child (Children's Rights Convention) and the Optional Protocols; the Optional Protocol to the Convention on the Rights of the Child with the Participation of Children in Armed Conflicts (Child Soldier Contract),
- The Optional Protocol to the Convention on the Rights of the Child in a Communication Process,⁶⁵ the Optional Protocol on the Sale of Children, Child Prostitution and Child Pornography,
- the Convention on the Rights of Persons with Disabilities (Disability Rights Convention) and the Optional Protocol to the Convention on the Rights of Persons with Disabilities,

62 European Union (2000).

63 Federal Constitutional Court (2019).

64 United Nations (no date).

65 Germany was the first European country to ratify the additional protocol to the Convention on the Rights of the Child, which enables individual complaints to be made.

- the Convention against Forced Disappearance,
- the Council of Europe Convention on Preventing and Combating Violence against Women and Domestic Violence (Istanbul Convention).

Art. 1 (2) of the Basic Law provides for a general commitment to international human rights. Art. 25 GG stipulates that international law takes precedence over general federal laws. The Basic Law is generally interpreted as being 'friendly to international law'. Germany also fulfils its duty to regularly submit state reports in accordance with the human rights conventions.⁶⁶ It should also be positively emphasised that the public prosecutor's offices in Germany conduct criminal proceedings according to the principle of universal law.⁶⁷

Despite the generally high level of human rights protection in Germany, there are deficits in some areas. The Committee on Economic, Social and Cultural Rights of the United Nations sees considerable deficits in the implementation of the UN Social Pact, for example in the National Action Plan for Business and Human Rights (NAP). In particular, it criticises the voluntary nature of the measures and the fact that there are no effective monitoring mechanisms for companies' due diligence with regard to compliance with human rights.⁶⁸ The Committee recommends that Germany create a legal framework that ensures all companies based in Germany and all companies in areas over which Germany exercises jurisdiction both investigate, prevent and combat human rights violations associated with their business activities in Germany, as well as making companies liable for these violations.

The following deficits are criticised in the enforcement of law against companies:

- the practical hurdles that restrict access to justice for non-nationals whose rights are allegedly violated by German companies abroad, although German law grants them access to justice and legal aid
- the lack of collective redress mechanisms in the code of criminal procedure, apart from consumer protection suits
- the lack of criminal liability of corporations in German law
- The lack of disclosure procedures, as this makes it extremely difficult for the applicant to prove that they have been injured by the actions of a company

In addition, Germany has not yet ratified the Optional Protocol to the UN Social Pact.⁶⁹ There are deficits in the implementation of the Optional Protocol to the UN Social Pact, particularly in the areas of the ban on strikes for civil servants and in the care of the elderly and child poverty.⁷⁰

66 Federal Foreign Office (2020).

67 Kroker (2016).

68 United Nations (2018b).

69 Ibid.

70 Ibid.

Furthermore, a supply chain law is also required for Germany.⁷¹ The first cornerstones for a law ensuring fair supply chains were drawn up by the Federal Ministry for Economic Cooperation and Development and the Federal Ministry for Labour and Social Affairs.⁷²

R.A.2 Is there a legal framework that recognises that the same rights that people have offline must be protected online?

► **Indicator:** Evidence that the principle of online/offline equivalence is accepted and implemented in law and practice

There is no express legal regulation in Germany that defines an online/offline equivalence of basic and human rights. Rather, the equivalent validity of these rights is assumed. This is evident both in the actions of the administration and the legislature⁷³ as well as in jurisprudence.⁷⁴ As a signatory to the ECHR, a member state of the Human Rights Council and a member state of the Council of Europe, Germany is committed to the principle of online/offline equivalence.

In 2018, Germany underscored its commitment to protecting privacy in the digital age and assumed the chair of the Freedom Online Coalition (FOC), which is committed to promoting human rights in the digital age.⁷⁵ The protection of human rights is also an important field of action in cyber foreign policy. In 2013 and 2014, the UN General Assembly passed resolutions on the right to privacy in the digital age. They could be traced back to a German-Brazilian initiative.⁷⁶ On 5 March 2020, during the general debate of the 43rd session of the Human Rights Council in Geneva, Germany issued a statement on behalf of the members of the FOC on digital inclusion.⁷⁷ The statement reaffirms the FOC's commitment to promoting digital inclusion and calls upon governments to implement long-term measures to address Internet access and use in order to bridge the multiple digital divides, including addressing underlying root causes.

Although fundamental and human rights in analogue and digital spaces basically enjoy the same protection, the fact that these spaces exist under very different circumstances leads to practical difficulties, e.g. with the protection of the general right to privacy of the individual under Art. 1 (1) and Art. 2 (1) GG.

The prerequisite for exercising human rights on the Internet is access to the Internet, which must be ensured by government infrastructure measures and, moreover, access to Internet content

71 Supply Chain Act initiative (2020).

72 Federal Ministry for Economic Cooperation and Development (2020).

73 E.g. the applicability of Section 130 StGB.

74 Federal Court of Justice (2013).

75 Federal Foreign Office (2018).

76 United Nations (2018c); Resolution adopted by the General Assembly on 18 December 2013.

77 Freedom Online Coalition (2020).

must be protected from excessive censorship. This is precisely because the fundamental right of freedom of expression under Art. 5 GG as a fundamental right that facilitates rights is under increasing pressure on the Internet.⁷⁸

The conditions in which opinions are expressed and exchanged in the digital communication spheres of the Internet are very different from the conditions that apply in analogue spaces.

Germany is actively involved in the [Council of Europe](#) for an equivalent standard of human rights protection online.⁷⁹ The aim is to shape the Internet on the basis of human rights, democracy and the rule of law. In the Council of Europe, Germany wants to ensure that the Internet offers a safe and open environment where freedom of expression and assembly can be exercised and one that creates a space for diversity, culture, education and knowledge.

Online media professionals have largely the same rights and the same protection as media professionals in the print or broadcast media. However, the official press pass is only available to professional media workers, i.e. those whose journalistic activities must account for at least 51% of their income.⁸⁰ This ID is associated with privileges, e.g. the granting of privileged access rights, and the German Code of Criminal Procedure only grants the right to refuse to testify to people who have been involved in the production or distribution of journalistic material on a full-time basis. In digital journalism, these boundaries cannot always be clearly drawn.⁸¹

78 Kettemann; Benedek (2020).

79 Council of Europe (2020).

80 Press pass (2016) with reference to: Rath, C. (01.12.2016).

81 Section 53 (1) sentence 5 of the German Code of Criminal Procedure (StPO).



THEME B

Freedom of Expression

RB.2 Are restrictions on freedom of expression clearly defined, transparent, and are they implemented in accordance with international agreements, laws and standards?

► **Indicator:** *Legal restrictions on freedom of expression consistent with international and regional agreements, laws, and standards, and evidence that government and other competent authorities comply with them*

Freedom of expression is guaranteed in Art. 5 sec. 1 sentence 1 GG, both in word, in writing and in pictures. Art. 5 sec. 1 sentence 2 GG also protects the freedom of the press, reporting and broadcasting. Freedom of expression applies not only to Germans, but also to foreign nationals. Freedom of expression is thus a so-called fundamental right for everyone.⁸² The protection under Art. 5 GG is sufficient for the scope of protection provided by international and regional international treaties for the protection of human rights.

Racist agitation or anti-Semitism are punishable by law. It is also forbidden to spread ideas of National Socialism, to deny the Holocaust or to glorify the ideology of National Socialism.

The right to freedom of expression fulfils two functions, first and foremost, it is a right of defence, i.e. it protects people in a subjective function from the state (status negativus). In addition, the basic right to freedom of expression also gives rise to a right to participation as a guarantee obligation of the state (status positivus). However, freedom of expression also has an objective function. The latter leads to an impact on civil law, which needs to be interpreted in the light of freedom of expression. Therefore, there is also an indirect horizontal effect of the fundamental right to freedom of expression. The freedom of expression primarily includes the right to expression of opinion. The scope of protection under Art. 5 (1) GG is based on a broad concept of opinions. Opinions are understood to be value judgments as 'an expression shaped by the element of opinion and belief'.⁸³ In addition to the positive dimension, there is also a negative freedom of expression, which includes the right to refuse to attribute an opinion.⁸⁴

82 Dürig/Maunz (2013), GG Art. 5 (1), (2) marginal no. 23.

83 Dürig/Maunz (2013), GG Art. 5 (1), (2) marginal no. 47; Federal Constitutional Court (1958); Federal Constitutional Court (1982); Federal Constitutional Court (1994); Federal Constitutional Court (2009).

84 Ibid., GG Art. 5 (1), (2) marginal no. 48.

In contrast to opinions, factual assertions are amenable to proof of truth. This means that the legal situation is different for statements of fact. Abusive criticism must be subordinated to the protection of honour if its main purpose is to defame people instead of dealing objectively with the topic under discussion.⁸⁵ The wording of Art. 5 (1) sentence 3 GG reads: 'There is no censorship'.⁸⁶ However, this does not result in an independent right. Rather, the wording should be understood as a barrier to the state, i.e. a restriction of possible limitations on freedom of expression. The ban on censorship regularly stimulates the further development of doctrines regarding freedom of expression.⁸⁷

The ECHR and the European Charter of Fundamental Rights do not have provisions that are identical to Art. 5 (1) sentence 3 GG. The fundamental right to freedom of expression finds its limit in the provision under Art. 5 (2) GG. In contrast to the provisions on the protection of freedom of expression in the ECHR or the UN Civil Pact, the Basic Law expressly names three groups of laws that can restrict freedom of expression, namely the general laws, laws for the protection of young people and provisions for the protection of personal honour (Art. 5 (2) GG).⁸⁸

According to Art. 1 (3) GG fundamental rights bind the executive, the legislature as well as the judiciary and thus they are also bound to Art. 5 GG. Every act of public authority must be measured against the catalogue of fundamental rights under Art. 1-19 GG.⁸⁹

Respect for human rights is monitored by various bodies in the legislative and executive branches, but also by independent organizations, and violations are documented. The Federal Government's representative in charge of human rights policy and humanitarian aid is based in the Federal Foreign Office. This person observes international developments, coordinates human rights work with other government agencies and advises the Federal Foreign Office on human rights issues. The German Bundestag has been supporting and monitoring German human rights policy since 1998 through its Committee for Human Rights and Humanitarian Aid. In 2000, the German Institute for Human Rights, a state-funded but independent institution, was founded in Berlin. As a national human rights institution in accordance with the Paris Principles of the United Nations, it aims to contribute to the promotion and protection of human rights by Germany on a national level and abroad.

85 Federal Constitutional Court (1995).

86 Article 5 (1), sentence 3 GG.

87 Dürig/Maunz (2013), GG Art. 5 (1), (2) marginal no. 115.

88 Ibid., marginal no. 114.

89 Ibid., marginal no. 107.

RB.4 Under what conditions does the law make platforms and other providers of online services liable for content that is published or shared by users on them?

► **Indicator:** *The legal framework for intermediary liability and content regulation is consistent with international and regional agreements, laws and standards, and evidence of proportionality of implementation*

There are (still) no specific agreements on provider liability at the international level. The EU's Digital Services Act will set up guiding principles here. Provider liability in Germany is in accordance with the general principles that can be found in international regulations for the protection of human rights.⁹⁰ It is also largely in line with the Council of Europe's recommendations on the role and responsibility of states and Internet intermediaries from 2018.⁹¹

Host providers can be made liable for illegal content under the German Telemedia Act.⁹² The legislation differentiates between full liability for own content and limited liability for service providers and host providers for disturbances caused by third-party content (German doctrine of "Störerhaftung").⁹³ In 2012, the Federal Court of Justice specified additional blocking and filtering obligations for host providers in the 'Alone in the Dark' case.⁹⁴ In this case, the games publisher Atari sued the file hosting service Rapidshare for copyright infringement in respect of its 'Alone in the Dark' game. While the court did not hold Rapidshare liable for the direct breach, it found that Rapidshare had neglected its monitoring duties as part of its due diligence.⁹⁵ In a later decision, the Federal Court of Justice established and expanded the hosting provider's obligations. Host providers are therefore obliged, under certain circumstances, to monitor their own servers and search for copyrighted content as soon as they have been informed of a possible infringement.

In 2015, the Federal Court of Justice ruled that the blocking of a website can be ordered as a last resort if this is the only means for a copyright holder to effectively end an infringement on this website.⁹⁶ It thereby specified the requirements to assess the proportionality of the measure. In such cases, the owner of the copyright has a claim against the Internet service provider to block the website concerned following an examination of all the relevant circumstances.

The third Act Amending the Telemedia Act of September 2017 largely abolished legal liability for providers of open wireless networks, so-called hotspots. For years, the number of free public

90 Cf. Kettemann, Matthias C. (2019), p. 67.

91 Council of Europe (2018).

92 Federal Court of Justice (2015a); Federal Court of Justice (2015b).

93 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (2007).

94 Federal Court of Justice (2012).

95 Ibid.

96 Federal Court of Justice (2015a); Federal Court of Justice (2015b).

WiFi hotspots in Germany remained low, as the providers feared possible negative legal consequences if their networks were used for illegal activities. While the new legislation has received generally positive reviews from professionals, nevertheless, it has also met with criticism as it could allow copyright holders to force hotspot providers to block certain websites or content that violates copyright or other laws.⁹⁷

The Network Enforcement Act (NetzDG) was passed in 2017 specifically to address the responsibility of intermediaries. It obliges social media platforms with more than two million registered users in Germany to examine and delete reported content. If the flagged content is obviously illegal then the platform has to block or remove it within 24 hours; if it proves to be otherwise illegal, the content has to be blocked or removed within seven days. The NetzDG is based on the illegality concept of 22 criminal offences.⁹⁸ After deciding to delete or retain reported content, the company then has to inform both complainants and users. An infringing party may be fined up to EUR 50 million.⁹⁹ Before the NetzDG came into force it was subject to severe criticism¹⁰⁰ and continues to be controversial.

The amendments to the Network Enforcement Act coming in 2021 will, among other things, introduce a right to restitution. However, the plan to oblige platforms to send reports to the database maintained by the Federal Criminal Police Office about potentially illegal content along with identifying data for the publisher is considered to be problematic. The planned introduction of improved data access for academia can be considered a positive development.

97 Dachwitz, I. (30 June 2017).

98 Section 86 ('Dissemination of propaganda material by unconstitutional organisations'), Section 86a ('Use of symbols of unconstitutional organisations'), Section 89a ('Preparing a serious subversive act'), § 91 ('Instructions for committing a serious subversive act'), Section 100a ('Treasonous forgery'), Section 111 ('Public incitement to criminal offenses'), Section 126 ('Disturbing public peace through threats of criminal offenses'), Section 129 ('Setting up criminal organisations'), Section 129a ('Education of terrorist organisations'), Section 129b ('Criminal and terrorist organisations abroad'), Section 130 ('Incitement to hatred'), Section 131 ('Depiction of violence'), Section 140 ('Rewarding and approving criminal offenses'), Section 166 ('Insulting creeds, religious societies and ideological associations'), § 184b ('Distribution, acquisition and possession of child pornography documents') in conjunction with § 184d ('Making pornographic content accessible via radio or telemedia'), §§ 185 to 187 ('Insult', 'Defamation', 'Defamation'), § 201a ('Violating the extremely private sphere of life through image recordings'), § 241 ('Threat') or § 269 ('Forgery evidential data').

99 Heldt, A.; Kettemann, M. C.; Schulz, W. (2019), p. 23.

100 Ibid., p. 22 f. and p. 24 ff.



THEME C

Right of Access to Information

RC.2 Does the government block or filter access to the Internet as a whole or to certain online services, applications or websites, and for what reasons and with what degree of transparency is this done?

-
- ▶ **Indicator:** *Legal framework for blocking or filtering Internet access, including transparency and oversight regulations*

 - ▶ **Indicator:** *Evidence in government and court decisions and from other credible and authoritative sources regarding blocking or filtering access*

 - ▶ **Indicator:** *Occurrence, type and basis for shutdowns or other restrictions in Internet connectivity*

 - ▶ **Indicator:** *The number and trend of content restrictions, domain name withdrawals and other interventions over the past three years.*

There is generally no specific legal authorisation for the government to block or filter Internet access.¹⁰¹ As far as can be determined, there have been no Internet shutdowns yet in Germany, nor have there been any cases of specific government-directed throttling of Internet access speed, as reported in other countries.¹⁰² The Internet can technically be ‘switched off’ in different ways. On the one hand, there is the option of blocking IP addresses or of redirecting them specifically (traffic shaping) so that services are no longer available.¹⁰³ Throttling can be implemented technically using different methods, for example, via bandwidth and traffic management,¹⁰⁴ where particular communication is prioritised, or via in-line deep packet inspection,¹⁰⁵ which leads to latency, or using port partitioning that affects the entire data traffic, or changes in the routing path.¹⁰⁶ Due to the decentralised structure of the Internet and the associated possibility of redirection, Internet connectivity failures due to power outages or overloads usually occur rarely

101 Freedom House (2019).

102 Mühlenmeier, L. (06 March 2020).

103 Voelsen, Daniel (2019).

104 Mühlenmeier, L. (2020).

105 Ibid.

106 Ibid.

and only for a short time, as happened in 2018 at the largest German Internet hub, DE-CIX, in Frankfurt am Main.¹⁰⁷

With the signing of the ‘Contract for the Web’¹⁰⁸ in 2019 the Federal Government confirmed their intention, agreed in the coalition agreement of 2018, to ensure that the population should have reliable and fast Internet access by 2025.¹⁰⁹

It should also be noted that the general right of personality¹¹⁰ includes the fundamental right to guarantee the confidentiality and integrity of information technology systems. Information technology is of ‘key importance’ for the way many people ‘conduct their lives’.¹¹¹ The basic right to a decent minimum subsistence level also includes access to the Internet, as it enables ‘securing the possibility of maintaining interpersonal relationships and a minimum of participation in social, cultural and political life’.¹¹² ‘This means that the Internet has evolved into a medium that has a decisive influence on the way a large part of the population lives. Its failure is significantly noticeable in everyday life.’¹¹³ Any blocking or filtering must therefore be legally justified and withstand a fundamental rights proportionality test.

Legal obligations to block, filter or delete content arise for Internet service providers from the Telemedia Act (TMG)¹¹⁴ (with civil liability for Internet service providers), Section 97 of the Copyright Act (UrhG),¹¹⁵ Section 14 ff. of the Trademark Act (MarkenG)¹¹⁶ and Section 8 of the Act against Unfair Competition (UWG).¹¹⁷ With regard to minors, the new Inter-State Treaty on Media (MStV) that came into force on November 7, 2020¹¹⁸ and the Inter-State Treaty on the Protection of Minors from Harmful Media (JMSiV)¹¹⁹ are still relevant, with the former replacing the old Inter-State Broadcasting Treaty.

Adopting both the NetzDG and changes to the TMG have further developed the legal situation for measures to block, filter and remove illegal Internet content. In Section 3 (2) sentence 1, the NetzDG obliges social networks to introduce procedures that ensure that they ‘take note of the

107 Bunte, O. (10.04.2018).

108 Contract for the Web (2019).

109 Ibid., Principle 1: ‘1. By setting and tracking ambitious policy goals, 1GB of mobile data will cost no more than 2% of average monthly income by 2025. 2. Access to broadband Internet is available for at least 90% of citizens by 2030, and the gap towards that target is halved by 2025. 3. At least 70% of youths over 10 years old and adults will have Information and Communication Technology (ICT) skills by 2025.’

110 Art. 1 (1), 2 (1) GG.

111 BVerfG, judgment of the First Senate of February 27, 2008, marginal no. 171, 232.

112 BVerfG, judgment of the First Senate of February 9, 2010, 1 BvL 1/09, marginal no. 135.

113 BGH, judgment of III. Civil Senate of January 24, 2013 - III ZR 98/12, marginal no. 17.

114 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (2007).

115 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (1965).

116 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (1994).

117 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (2004).

118 State government of Rhineland-Palatinate (2020).

119 Commission for the protection of minors in the media (2020).

complaint immediately and check whether the content displayed in the complaint is illegal and has to be removed or whether the access to the content is to be blocked'. This obligation must be read against the background of Section 10 TMG, which obliges the providers of telemedia services to block access immediately or to remove illegal content after becoming aware of it. Even before the NetzDG, anyone whose personal rights had been violated could, on the basis of a civil law claim, demand the disclosure of the name of the potential perpetrator from a provider of telemedia services. In the [new version](#), the necessity of a court order on the admissibility of such disclosure has been clarified.¹²⁰

In some cases certain applications, websites or content are blocked in Germany. This mainly concerns content relevant to criminal law. In 2009, Germany wanted to use its [Access Impediment Act \(Zugangsschwerungsgesetz\)](#) to oblige Internet providers to block child pornography sites that the Federal Criminal Police Office had previously placed on a corresponding index.¹²¹ Inter alia, because judges did not have to review the illegality of web pages, the law drew considerable criticism and its content was [redrafted](#)¹²² in 2011 by the Bundestag. The courts generally have very high requirements in order to completely block applications or pages.¹²³

The [linksunten.indymedia](#) case was an exception.¹²⁴ In the [linksunten.indymedia](#)¹²⁵ case, the Federal Ministry of the Interior, for Building and Community (BMI), as a hazard [prevention authority, banned this association](#) on the basis of the German Associations Act and, thus, effectively imposed a media ban on the platform. In this way, the Ministry had wanted to 'shut it down'.¹²⁶ [The persons identified and addressed by the Federal Ministry of the Interior](#) as an association took legal action against this before the Federal Administrative Court (BVerwG). However, the court dismissed the action as admissible but unfounded and did not deal with the core question of the legality of banning the association.¹²⁷ In May 2020, those affected lodged a [constitutional complaint](#) with the BVerfG.¹²⁸ The result remains to be seen. In any case, the Federal Constitutional Court is likely to follow the jurisprudence of the ECHR established in the [Ürper v. Turkey](#)¹²⁹ case, which clarified that a blanket, complete and indefinite ban on a newspaper violated Article 10 ECHR.

120 Kettmann, M. C. (2019), p. 9.

121 Association of the German Internet Industry e.o. V. (2009).

122 Schäfers, J. (25.05.2011).

123 Tagesspiegel (26.11.2015).

124 Laufer, Daniel (29.01.2020); Thurn, J. P.; Werdermann, D. (31.1.2020).

125 Ibid.

126 Federal Ministry of the Interior, Building and Community (2020).

127 Federal Administrative Court (2020).

128 Reuter, M. (09.06.2020).

129 European Court of Human Rights (2009), [Ürper et al. v. Turkey](#) (2009), 44 and 45: "The practice of banning the future publication of entire periodicals on the basis of section 6 (5) of Law no. 3713 went beyond any notion of 'necessary' restraint in a democratic society and, instead, amounted to censorship (...) There has accordingly been a violation of Article 10 of the Convention." [https://hudoc.echr.coe.int/eng#{"itemid":\["001-95201"\]}](https://hudoc.echr.coe.int/eng#{).

Internet applications, websites or content can be blocked by so-called DNS hijacking, which IT experts describe as ‘completely ineffective’, as these could simply be bypassed.¹³⁰ There is also the option of using a proxy server, which enables inquiries for inadmissible offers to be filtered or redirected to another page, or the IP address can be blocked on the router. The Research Services of the Bundestag analysed the different options in 2016 of the current status.¹³¹

Service providers can be obliged by court rulings to block and delete illegal content. The court proceedings usually take place in public. According to the requirements of the E-Commerce Policy, the Telemediengesetz (TMG) and the NetzDG, private individuals are responsible for deleting content under certain circumstances. Section 2 of the NetzDG provides for reporting requirements. According to Section 3 (6) NetzDG, social media platforms have the option of establishing institutions for regulated self-regulation. The requirements for establishing regulated self-regulation are, in particular, competence and independence of the self-regulation body, speed and transparency of the process, as well as ensuring that the self-regulation body is supported by several providers of social networks or institutions that are able to ensure that the self-regulation body is properly equipped. In addition, it must be open to membership by other providers, especially social networks.

Platforms moderate content primarily according to their general terms and conditions/community standards. In the past, this also resulted in deletion of permissible expressions of opinion and this can be tackled in legal proceedings in Germany (Munich Higher Regional Court (OLG), judgment of January 7, 2020, 18. Civil Senate, 18 U 1491/19; Oldenburg Higher Regional Court (OLG), judgment of 1.7.2019 - 13 W 16/19)¹³² In May 2019, the BVerfG stated that deleting a post and blocking the Facebook account of the right-wing extremist party ‘The Third Way’ was inadmissible.¹³³

With regard to Art. 5 (1) GG, German courts have established that Facebook is a public marketplace for the exchange of information and opinions¹³⁴ and, therefore, – in applying the indirect third-party effect of the fundamental rights – it has to ensure that expressions of opinion that are permissible under Art. 5 (1) sentence 1 GG are not deleted.¹³⁵ German courts argued that Facebook has developed a ‘quasi-monopoly’¹³⁶ and that it is a private company offering a public communication space and that, indirectly, it has to protect the rights of users according to

130 Biermann, K. (13.02.2009): *Quote from Hannes Federrath, IT security researcher at the University of Regensburg and invited by the Bundestag Subcommittee on New Media as an expert on the subject:* Such so-called DNS blocks are “completely ineffective” and do not make access to child pornography difficult. It was far too easy for laypersons to bypass them. “This technology does no harm, but it is also useless.”

131 German Bundestag (2016a).

132 Lower Saxony Higher Regional Court (OLG) (2019).

133 Federal Constitutional Court (2019b).

134 Frankfurt/Main Higher Regional Court (OLG) - 2017, 16 U 255/16, (28).

135 Munich Higher Regional Court (OLG) (2018) - 18 W 858/18.

136 Dresden Higher Regional Court (OLG) (2018) - 4 W 577/18.

Art. 5 (1) sentence 1 GG.¹³⁷ Hence it would not be allowed for platforms in general¹³⁸ to remove “acceptable expressions of opinion”.¹³⁹ Similarly, community standards should not exclude such content.¹⁴⁰ In this context, the German courts regularly presume an indirect third-party effect of fundamental rights and interpret the community standards of the platforms accordingly.

With the aim of securing equal communication opportunities both offline and online, and in order to implement the 2018 revised European Directive on Audiovisual Media Services (AVMS), the Inter-Sate Media Treaty (MStV)¹⁴¹ was ratified in 2020 after long negotiations. The new MStV contains increased transparency requirements and non-discrimination for opinion-relevant media platforms, user interfaces and media intermediaries such as smart speakers, search engines, smart TVs and cable network operators. The term ‘broadcasting’ has also been brought up to date. Prior to the adoption of the MStV and the implementation of the two EU copyright directives - (EU) 2019/790 (Digital Single Market Directive) and (EU) 2019/789 (“SatCab” Directive) of April 17, 2019 - there were public consultation processes for the participants and institutions involved.

R.C.4 Will individuals, media workers or other online/media professionals be arbitrarily arrested, prosecuted or intimidated for accessing information online?

► Indicator: Scope and type of legal provisions and practice

In Germany, people who work in journalism are generally fully protected from government interference. As part of the press, they enjoy the protection of the freedom of the press under Article 5, Paragraph 1, Clause 3 of the Basic Law. This also applies to the Internet.¹⁴²

In principle, (investigative) journalism is possible without restrictions in Germany. However, Section 201 of the Criminal Code has been a target for criticism for restricting the possibilities for (legal) investigative journalism.¹⁴³ In contrast to other groups that are subject to professional secrecy, there is no general protection in the digital space. In 2015, for example, two journalists from Netzpolitik.org briefly faced criminal proceedings for alleged high treason. In the aftermath, the Federal Minister of Justice at the time, Heiko Maas, announced a draft law¹⁴⁴ that would

137 Stuttgart Higher Regional Court (OLG) (2018- 4 W 63/18, (73).

138 Munich Higher Regional Court (OLG) (2018) - 18 W 1955/18 (19 f.)- Possible exception for sub-forums.

139 For example: *Munich Higher Regional Court (OLG)* (2018) - 18 W 858/18 (30); 18 W 1873/18 (21); 18 W 1383/18 (20f.); 18 W 1294/18 (28); *Karlsruhe Regional Court (LG)*, 2018 - 11 O 54/18 (12); *Frankfurt/Main Regional Court (LG)*, 2018 - 2-03 O 182/18 (16); *Bamberg Regional Court (LG)*, 2018 - 2 O 248/18 (86), *Berlin Court of Appeals (KG)*, 2019 - 10 W 172/18 17.

140 For a detailed comparative law analysis Germany/USA see: Kettemann, M.C.; Tiedeke, A. S. (2020).

141 Lower Saxony State Media Authority (2020).

142 See Indicator 23.

143 Klintworth, S. M. (2014); Eichhoff, J. (2010).

144 taz (01.08.2015).

explicitly exclude media professionals from the scope of the treason provision in the criminal code. So far, however, there has been no reform.

There are hardly any known cases of direct physical intimidation or violence against media workers on the part of the state. Mention should be made of a raid against the ‘Zwiebelfreunde’ association – an association of people who are active in propagating tools to promote online anonymity. A court subsequently declared that the raid had been illegal.¹⁴⁵ Positive state obligations to protect media professionals go beyond this and also include training the police to deal with them in a lawful manner.

A more recent example of a crackdown by a Federal Ministry on the press is from June 2020. The Federal Minister of the Interior announced publicly that he would file charges against the daily newspaper (taz) and the journalist Hengameh Yaghoobifarah for sedition. She published an article titled: ‘Abolition of the police – All cops are incapacitated’ as a column. The German Police Union (DPolG) and the Police Union (GdP) had previously reported incitement to hatred¹⁴⁶ and lodged a complaint with the German Press Council.¹⁴⁷

States also have the duty to protect media representatives from intimidation by third parties. This is especially true of those reporting on the right-wing scene.¹⁴⁸ Frank Überall, the chairman of the German Association of Journalists (DJV), reported that: ‘Threats are not isolated cases. There are many.’¹⁴⁹ This applies particularly to issues such as migration and integration. Insults and slander have been part of everyday life for years. The WDR journalist Restle said that he receives threats almost after every ‘Monitor’ broadcast or every ‘Tagesthemen’ comment. ‘I don’t take any of this terribly seriously.’ However, the fact that this has become ‘effectively the norm’ is alarming.¹⁵⁰

► **Indicator:** *A number of arbitrary arrests and prosecutions for accessing content that is not unlawful under international agreements on the circumstances and criteria for permitted restrictions*

In general, individuals, media professionals or other online/media workers in Germany can view information online and pursue their journalistic work without having to fear arbitrary arrests or criminal prosecution. There are no figures on arbitrary arrests or prosecutions. There are, however, individual cases where the courts determined that criminal prosecution measures against media

145 Beck aktuell (2018): ‘There is not a sufficient probability of finding relevant data. There are no indications that the victims, their association called Zwiebelfreunde e. V. nor the group ‘Riseup Networks’ even belong to the group of unknown perpetrators. In addition, it was not immediately apparent that any information could be found about the perpetrator’s environment or about the perpetrators.’

146 ZEIT Online (21.06.2020).

147 Police Union (2020).

148 Reporters Without Borders (2019).

149 Gehringer, T. (2019).

150 ZEIT Online (2019).

workers had been unlawful. This also includes the example of the ‘Zwiebelfreunde’.¹⁵¹ After criticism from freedom of the press and Internet rights’ activists, the Munich Regional Court ruled that the searches and seizures had been illegal and ordered the return of all seized material.¹⁵²

The BND Act (Federal Intelligence Service Act), which has been controversial since 2016 because it enabled the German foreign intelligence service to legally monitor all communications by media professionals and entire editorial offices or publishing houses outside of Europe,¹⁵³ was declared unconstitutional by the Federal Constitutional Court in May 2020.¹⁵⁴ The legislature now has until 2021 to make improvements. In particular, the confidential communication of certain professional groups (lawyers and media workers) should be particularly protected in the future. A central watchdog is now required.¹⁵⁵

However, there is evidence that media professionals, in particular, are being threatened by people from the right-wing extremist spectrum.¹⁵⁶ The European Centre for Press and Media Freedom (ECPMF) reported in a study: ‘From the beginning of 2015 to March 2020, the European Centre for Press and Media Freedom registered 119 violent attacks on journalists in Germany. Despite the fluctuating number of cases, the origin of the attacks has remained the same over the years: the majority, 77 percent of all incidents between 2015 and 2020, came from the right-wing.’¹⁵⁷

151 Cf. Indicator 30, cf. also Munich Regional Court (2018): ‘There is insufficient probability of finding relevant data. There are no indications that the victims, their association *Zwiebelfreunde e. V.* or the group ‘Riseup Networks’ even belong to the group of unknown perpetrators. In addition, it was not immediately apparent that any information could be found about the perpetrator’s environment or about the perpetrators.’

152 Ibid.

153 Reporters Without Borders (2020).

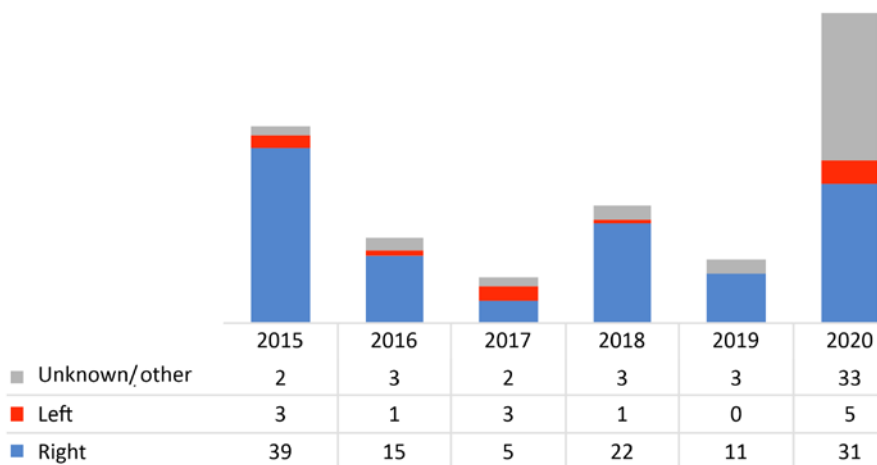
154 Federal Constitutional Court (2020).

155 Hoppenstedt, M.; Knobbe, M. (16.06.2020).

156 European Center for Press & Media Freedom (2020), p. 27. ‘In the past, many of those affected experienced inadequate protection and, in some cases, even hindrances to their work by the police. Therefore, besides sensitivity, sound knowledge of press legislation is also required. Specialist journalists who resolutely report on right-wing activities, in particular, are repeatedly having to face the misunderstanding and misconduct of the police [see Röpke, A. (2018)]. According to specialist journalists, police forces often regard attacks by neo-Nazis as political quarrels between left and right.’

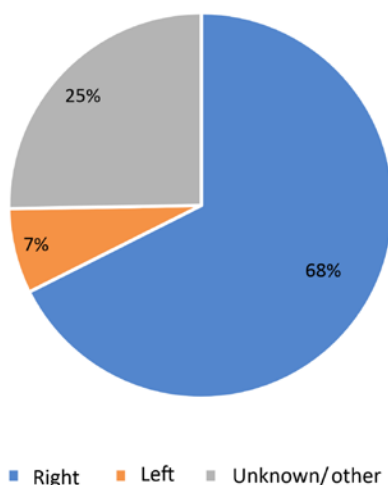
157 European Center for Press & Media Freedom (2020), p. 3.

Figure 2: Number of physical attacks 2015-2020



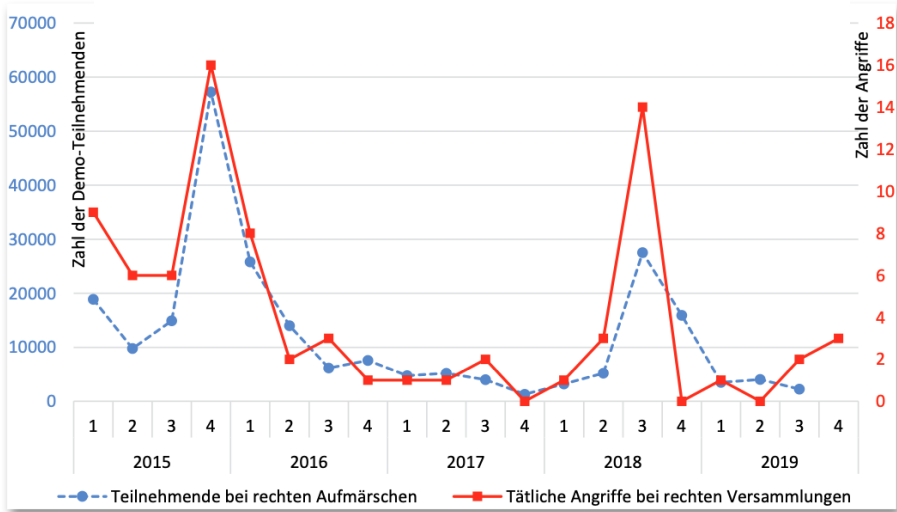
Source: ECPMF/Pauline Betche/Martin Hoffmann, graphic: 'Number of physical attacks 2015-2020' in Journalist as Enemy Stereotype V – Allied in press hatred, https://www.ecpmf.eu/wp-content/uploads/2021/07/Feindbild-Journalist-2021_EN-1.pdf#page=3, p. 3.

Figure 3: Political Localization 2015-2020



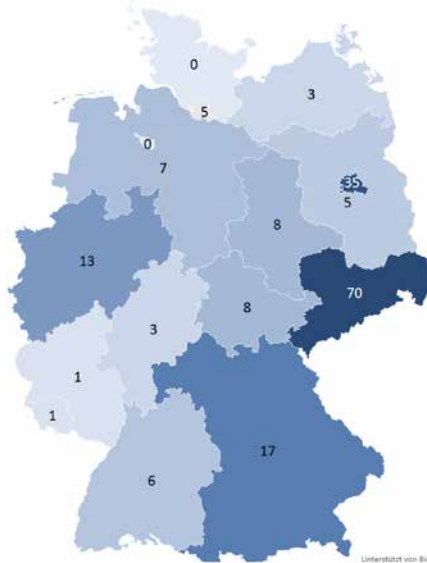
Source: ECPMF/Pauline Betche/Martin Hoffmann, graphic: 'Political Localization 2015-2020' in Journalist as Enemy Stereotype V – Allied in press hatred, https://www.ecpmf.eu/wp-content/uploads/2021/07/Feindbild-Journalist-2021_EN-1.pdf#page=8, p. 8.

Figure 4: Comparison of right-wing extremist mobilization and attack frequency 2015-2019



Source: ECPMF/Andreas Lamm, graphic: 'Comparison of right-wing extremist mobilization and the frequency of attacks 2015-2019 (quarterly)' in 'Feindbild Journalist IV - Threats as the 'new normal', 5 years of scrutiny', <https://www.ecpmf.eu/wp-content/uploads/2020/03/FeindbildPresse-IV.pdf#page=11>, p. 11.

Figure 5: Physical Attacks 2015-2020



Source: ECPMF/Pauline Bettle/Martin Hoffmann, graphic: 'Political Localization 2015-2020' in Journalist as Enemy Stereotype V – Allied in press hatred, <https://www.ecpmf.eu/wp-content/uploads/2021/07/FeindbildJournalist-2021-EN-1.pdf#page=9>, p. 9.



THEME D

Freedom of Association and the Right to take part in the Conduct of Public Affairs

3

As a member state of the EU, Germany is committed to improving the protection of media professionals. For example, Germany has participated in the United Nations Human Rights Council for adopting resolutions on the security of media professionals (e.g. Resolution A/HRC/33/L.6)¹⁵⁸.

RD.2 Can non-governmental organizations organise themselves freely online?

► **Indicator:** Evidence of an online organization and no undue interference in such an organization

Freedom of association is set out in Art. 9 GG and is respected in practice. Associations that are directed against the democratic order, e.g. in connection with National Socialism, are excluded. This also applies online. In Germany there is a lively sphere of NGOs and associations that operate freely. Many of them are organised online. Trade unions and business associations are also usually freely organised and play an important role in shaping the German economic model. The linksunten.indymedia case was an exception.¹⁵⁹

In 2019, several (political) NGOs were stripped of their tax-exempt status as non-profit organizations (Section 52 Fiscal Code, AO) after the Federal Fiscal Court decided that they were participating in party politics. These included, among others, Attac¹⁶⁰ and Campact¹⁶¹. The Attac case is currently under judicial review and the association has announced that it will, if necessary, go to the Constitutional Court, on the one hand to regain its non-profit status and, on the other hand, to create legal certainty regarding the question of what counts as non-profit.¹⁶² Around 80 organizations have joined forces in the alliance 'Legal Certainty for Policy Formation' because the non-profit status of a large number of organizations could be revoked. Amnesty International as well as 'Brot für die Welt' and Germany's Lesbian and Gay alliance belong to the alliance.

158 United Nations (2016).

159 Association of the German Internet Industry e.o. V. (2009); Thurn, J. P.; Werdermann, D. (31.01.2020); Reuter, M. (09.06.2020); Laufer, D. (2020); Tagesspiegel. (26.11.2015); Schäfers, J. (25.05.2011).

160 Wieduwilt, H. (26.02.2019).

161 Süddeutsche Zeitung (21.10.2019).

162 Geers, T. (06.03.2019).

R.D.3 Are there government guidelines for e-government and/or e-participation that encourage participation in government and public processes?

► **Indicator:** *Existence of government policies for e-government and e-participation, including the use of the Internet for public consultations*

E-participation and e-government are sub-areas of the government's digitalisation strategy. As part of the process of developing the white paper 'Digital Platforms' (2017) and the Federal Government's Artificial Intelligence (AI) strategy, extensive public online consultations were carried out with the participation of various interest groups.

In 2013 the Bundestag passed a law to promote electronic administration, also known as the E-Government Act (EGovG).¹⁶³ The explanatory memorandum states that it is 'a requirement of being close to the citizens that state administrations must make it easier for citizens to use electronic services in their private, voluntary and economic everyday life' in order to improve electronic communication with the administration.¹⁶⁴ The legislation pertains to federal institutions and to the authorities of the federal states and municipalities when they apply federal law. There are some exceptions, e.g. for the administration of justice. The law obliges every authority to provide access for the transmission of electronic documents. Public authorities should, among other things, provide information about their procedures in publicly accessible networks, receive their invoices electronically, manage files electronically, optimise and standardise administrative processes and make data that they have collected to carry out their tasks available for data retrieval in publicly accessible networks.

With another piece of legislation, the Online Access Act (OZG), the Bundestag passed regulations, in 2017, to improve online access to administrative services.¹⁶⁵ According to this, the federal and state governments should also offer their administrative services electronically via administration portals by the end of 2022 and link the federal and state portals to form a portal network. While the Federal Government considers the E-Government Act as a facilitating act, the Online Access Act obliges the federal and state governments to take specific measures.¹⁶⁶

In 2019, the Federal Government presented the report required by the legislator to evaluate the E-Government Act and accompanying regulations.¹⁶⁷ A survey of employees in administration came to the conclusion that the implementation of the law is still low overall (a quarter of the

163 Federal Ministry of Justice and Consumer Protection (2013).

164 German Bundestag (2002), p. 1 f.

165 Federal Ministry of Justice and Consumer Protection; Federal Office of Justice (2017).

166 German Bundestag (2019), p. 8.

167 Ibid.

administrations surveyed did not feel they had an obligation to implement the law).¹⁶⁸ The majority of the experts questioned were of the opinion that the law has nevertheless had a positive impact on the digitalisation of administration. For the further implementation of the law, various strategies under changed legislation were suggested by the management consultancy Kienbaum Consultants International as part of the evaluation. The Federal Government pointed out that the deadline of the end of 2022 that was set in the Online Access Act has created considerable pressure to take action.¹⁶⁹

In addition to the digitalisation of administration, the changed opportunities for participation through *online public participation in parliamentary work* are also being discussed in the Bundestag. The Office for Technology Consequences Assessment at the German Bundestag presented a comprehensive report to the Bundestag's Committee on Education, Research and Technology Assessment in 2017.¹⁷⁰ The Bundestag has provided a *platform for electronic petitions* since 2005 as an embodiment of the right of petition enshrined in the Basic Law. Online forums were one of the early formats for citizen participation; they are still used and have been supplemented by online consultations, which typically last a few weeks.

The Federal Government has decided on several strategies that affect the thematic fields of e-government and e-participation. These include the Digital Agenda 2014–2017, which provides that Germany, as an innovative state, should offer digital administrative services for the population and companies. In addition, the agenda aims to shape digital living environments in society and to enter into dialogue with social groups in digital formats. The fourth edition of the digitalisation implementation strategy and the artificial intelligence strategy of the federal government from 2018 aimed to use AI for sovereign tasks and adapt the competencies of the administration. To this end, the Federal Government plans to assume a pioneering role in the use of AI in administration and thus contribute to improving the efficiency, quality and security of administrative services and the provision of open administrative data. Specifically, an evaluation of the first law amending the E-Government Act ('Open Data Act') is planned in this context. The white paper 'Digital Platforms'¹⁷¹ (2017) envisages steps towards a 'digital regulatory policy for growth, innovation, competition and participation'. The draft of a Trust Services Act (VDG) is specifically planned. The aim is – where necessary – to supplement or specify the regulations in order to make it easier for trust service providers and users to apply the general terms of the eIDAS regulation and thus to create legal certainty'.¹⁷² The aim is to make online business transactions and e-government more comprehensive, simpler and more secure.

168 Ibid., p. 5.

169 Ibid., p. 8.

170 See the following: German Bundestag (2017).

171 Federal Ministry for Economic Affairs and Energy (2017).

172 Ibid., p. 72 f.

The research data centre model has become established for those areas that collect and publish data on the basis of statutory mandates at the federal level. The Federal Agency for Cartography and Geodesy acts as an important service provider for the provision of geodata, although even here comprehensive access is not easy for institutions that are not financed by the Federal Government. With regard to other research-relevant data, there are major hurdles with respect to access and generation that are not primarily due to data protection challenges.

► **Indicator:** *Values/rankings in UNDESA's e-participation index*

The UN Department of Economic and Social Affairs (UNDESA) monitors the development of e-government through surveys of governments and has been producing regular reports since 2001. The most recent report is from 2018; a new report is in preparation.¹⁷³ The focus is on the E-Government Development Index (EGDI), which is z-standardised between 0 and 1.¹⁷⁴ With a value of 0.8765, Germany ranked 12th internationally in 2018; two years previously it was still 15th.¹⁷⁵ The EGDI is the mean of 3 sub-indices, namely, the OSI Online Service Index (0.306), the HCI Human Capital Index (0.9036) and the TII Telecommunication Infrastructure Index (0.7952).

In the same survey, an E-Participation Index (EPI) is also compiled; this includes the electronic provision of information, online consultations and online decision-making processes with the direct participation of the population. Here Germany ranks 23rd with a value of 0.9213. In the 9-point plan for a digital Germany, the Federal Government Commissioner for Information Technology, the Federal Chief Information Officer (CIO) Dr. Markus Richter, provides for measures that give an outline for taking the first steps towards improvement. Ultimately, however, it will depend on the specific implementation of the goals.

173 United Nations (2001-2020).

174 The z-standardization records the difference between a measured value and the mean value and sets this in relation to the standard deviation. As a result, the index is only one means of comparison within a survey, however, because of its relation to the mean value it cannot provide any information about the absolute change in a country.

175 United Nations (2018a), p. 89.



THEME E

The Right to Privacy

RE.2 Is the protection of personal data vis-à-vis governments, companies and other organizations guaranteed by law and enforced, including the right of access to the information available and the right to redress?

► **Indicator:** *Legal framework for data protection, including oversight mechanisms and remedies and evidence that it is respected and enforced by government and other relevant authorities*

► **Indicator:** *Legal framework for commercial uses of personal data and international data transfer/security, including monitoring mechanisms and legal remedies*

► **Indicator:** *Existence and powers of an independent data protection authority or similar entity*

According to the constitution, data protection in Germany is guaranteed within the scope of the right to informational self-determination under Art. 1 (1) and 2 (1) GG. In its so-called census judgment, of 1983, the Federal Constitutional Court¹⁷⁶ stipulated that interference with the right to informational self-determination may only take place on the basis of legislation that also takes data protection into account. Any collection of data by the state, data use, data interception and storage require a legal basis for its authorisation, which has to be in accordance with the constitution. This includes powers under police rights in the federal states (General Security and Public Order Act (ASOG)/Act for the Protection of Public Safety and Order (SOG)), as well as those in the criminal procedure code (StPO) (e.g. Section 100a ff. StPO and Section 110 StPO). Government measures can be reviewed in the administrative courts. In Germany, the General Data Protection Regulation (GDPR) has also been in force since 25 May 2018;¹⁷⁷ with respect to data protection law generally, this has led to strong European dominance of this subject matter.

Compliance with data protection regulations is monitored by the data protection officers of the federal states¹⁷⁸ as well as the Federal Commissioner for Data Protection and Freedom of Information (BfDI). Due to federalism there is fragmentation with supervision at the level of the

176 Federal Constitutional Court (1983), case reference: 1 BvR 209/83, 1 BvR 269/83, 1 BvR 362/83, 1 BvR 420/83, 1 BvR 440/83, 1 BvR 484/83.

177 Federal Ministry of the Interior, Building and Community (2018).

178 Data Protection Conference (2020).

federal states and many individual federal state data protection authorities. The other EU member states, however, usually have central supervisory authorities.

In the performance of its duties the BfDI has been an ‘autonomous supreme federal authority’ since 2016,¹⁷⁹ independent of instructions and subject only to the law.¹⁸⁰ The BfDI is supported in its work by a total of around 220 employees.¹⁸¹

The BfDI has extensive investigative powers. Specifically, this means that ‘all federal public agencies and providers of postal or telecommunications services’¹⁸² are obliged to support the BfDI in its work.¹⁸³ This includes answering its questions, granting extensive access to files and stored data and the functionality of data processing programs, and the BfDI enjoys unrestricted access rights (Section 16 III of the Federal Data Protection Act (BDSG), with exceptions, under certain circumstances, according to Section 29 III of the BDSG). Inspections can also be carried out without cause.¹⁸⁴

If the BfDI finds data protection violations, it can take measures that range from a warning or reprimand of the person responsible or the data processor right up to a ban on data processing and a fine.¹⁸⁵ The measures are also binding for authorities and public bodies; this represents a significant improvement in the level of data protection compared to the previous possibility of making a complaint.¹⁸⁶ The orders of the Federal Commissioner can be reviewed before the administrative courts.

According to the GDPR, companies have to appoint a data protection officer under certain conditions. The commercial use of data is also regulated by the GDPR and the BDSG; the principle of consent is also the ‘safest variant’ here as well.¹⁸⁷ In addition, regulations on employee data protection are particularly relevant in this context.¹⁸⁸ Complaints can in turn be reported to the data protection authorities. The violation of data protection regulations is reviewed by the courts.¹⁸⁹

Since the judgment of the ECJ of July 16, 2020 by way of a preliminary ruling in the case C-311/18 (Schrems II), a lawful transfer of personal data to the USA on the basis of the so-called Privacy Shields [EU Commission Decision 2016/1250] is no longer possible. However, the

179 Federal Commissioner for Data Protection and Freedom of Information (2015).

180 Federal Commissioner for Data Protection and Freedom of Information (2020b).

181 Ibid.

182 Federal Commissioner for Data Protection and Freedom of Information (2020b).

183 Ibid.

184 Ibid.

185 Ibid.

186 Ibid.

187 Uecker, P. (2019).

188 Körner, M. (2019).

189 E.g. Karlsruhe Regional Court (LG) , judgment of 2.8.2019 - 8 O 26/19, ZD 2019 and Court of Appeals (KG), judgment of 20.12.2019 - 5 U 9/18 - 2019.

transmission of data on the basis of the so-called standard contractual clauses (SCCs), which are based on the Commission Decision 2010/87/EC, should continue to be lawful under certain conditions.¹⁹⁰ The prerequisites are that the data in the third country ‘enjoy a level of protection that is equivalent to the level guaranteed in the European Union by this regulation in the light of the Charter of Fundamental Rights of the European Union. In the assessment to be made in connection with such a transmission, particular consideration has to be given to the contractual provisions that have been agreed upon between the person responsible in the European Union or their processor based there and the recipient of the transmission based in the third country concerned, and, as regards possible access by the authorities of that third country to the personal data transferred, the relevant elements of the legal system of that country, in particular those set out in Art. 45 (2) of Regulation 2016/679.’¹⁹¹ This means that individual case reviews may be necessary.¹⁹²

The BfDI welcomed the strengthening of European fundamental rights by this judgment and announced its support for the implementation of the new requirements.¹⁹³ Although the court has not declared the SCCs to be inadequate per se, it remains questionable whether US companies can guarantee an equivalent level of protection at all. To support the implementation of the judgment, the European Data Protection Board (EDPB) has compiled and published FAQs.¹⁹⁴

RE.3 Are the powers of the law enforcement agency and other authorities to lawfully intercept user data necessary, proportionate and limited to circumstances consistent with international and regional agreements, laws and standards?

► **Indicator:** *Legal framework for lawful data interception, including independent oversight and transparency, and evidence of implementation by government and other competent authorities*

Data access, data interception, data storage and, in particular, data retention are regulated by law in Germany and are monitored by both the BfDI and the courts.

The legal basis for online searches in Germany has been in place since the coming into effect of Art. 3 of the Act for the More Effective and Practical Design of Criminal Proceedings on August 24, 2017¹⁹⁵ of the new Section 100b StPO. Five constitutional complaints are

190 European Union (2016c).

191 *Ibid.*, Tenor (2nd).

192 *Ibid.*, (134).

193 Federal Commissioner for Data Protection and Freedom of Information (2020a).

194 European Data Protection Board (2020).

195 Federal Gazette (2017b).

pending at the BVerfG that consider the legal change to be unconstitutional.¹⁹⁶ In 2008 the BVerfG¹⁹⁷ decided the following :

‘The general right of personality (Art. 2 (1) in conjunction with Art. 1 (1) GG) includes the basic right to guarantee the confidentiality and integrity of information technology systems. The secret infiltration of an information technology system (...) is constitutionally permissible only if there are actual indications of a specific risk for an extremely important legally protected interest (...).’¹⁹⁸ It is ‘basically to be made subject to a judicial order. The law that authorises such interference must contain precautions to protect the core area of the conduct of private life.’¹⁹⁹

After lengthy negotiations for a law to expand the possibilities of using the so-called ‘Staatstrojaner’ or government spyware²⁰⁰, in autumn 2020, the grand coalition agreed on a draft law to harmonise constitution protection law.²⁰¹ The draft drew criticism from many quarters and the Society for Freedom Rights has already announced that it will take legal action against the law when it comes into force.²⁰²

Data retention has been a concern of the courts at national and European levels for almost 15 years.²⁰³ At the BVerfG, overall more than 35,000 constitutional complaints have been lodged against data retention. In 2008, the Federal Constitutional Court initially severely restricted the possibilities for using the retained data.²⁰⁴ In March 2010, the BVerfG declared the statutory provisions on data retention to be unconstitutional.²⁰⁵ The Court stated, in this connection, that storing personal data for a period of six months was always unconstitutional if this is done for vague and/or undetermined purposes.²⁰⁶ Constitutional arrangements for data retention are thus basically possible. However, certain strict requirements would have to be observed. The BVerfG has mentioned four aspects that have to be observed in view of the serious encroachment on fundamental rights: a high standard of data security,²⁰⁷ sufficient transparency and effective legal

196 2 BvR 897/18, 2 BvR 1797/18, 2 BvR 1838/18, 2 BvR 1850/18, 2 BvR 2061/18: Constitutional complaints from lawyers, artists and media professionals, including some members of the German Bundestag, on the question of whether the Act for the More Effective and Practical Design of Criminal Proceedings of August 17, 2017 (BGBl. I p. 3202, came into effect on 24 August 2017) has resulted in changes to the Code of Criminal Procedure (StPO), in particular the option of ordering so-called source telecommunications monitoring and online searches (using the so-called ‘Staatstrojaner’ or government spyware), are constitutional.

197 Federal Constitutional Court (2008b).

198 Ibid.

199 Ibid.

200 Fiedler, M. (2020).

201 Meister, Andre (04.06.2020).

202 Ibid.

203 Federal Commissioner for Data Protection and Freedom of Information (2020c).

204 Federal Constitutional Court (2008a).

205 Federal Constitutional Court (2010).

206 Ibid., Para 162.

207 Ibid., Para. 186.

protection;²⁰⁸ clear regulations on the scope of data use;²⁰⁹ the exceptional nature of storing data as a precaution and for no particular reason.²¹⁰

The aim of the 'Act on the Introduction of Mandatory Storage and a Maximum Storage Period for Traffic Data'²¹¹ was to re-introduce data retention in Germany from 2015. However, the Federal Network Agency suspended the obligation for telecommunications companies after the Higher Administrative Court in Münster ruled that the provisions on data retention might not be compatible with the EU Charter of Fundamental Rights.²¹² In response to this announcement the German telecommunications companies refrained from implementing data retention for the time being. On 25 September 2019, the Federal Administrative Court in Leipzig decided to submit a question²¹³ to the ECJ on the interpretation of the data protection guidelines for electronic communications.²¹⁴ The applicability of the regulations on data retention contained in the Telecommunications Act (TKG) will depend on this decision.²¹⁵

In addition to traffic data, the legal handling of inventory data has not yet been ultimately clarified. In a decision of May 2020,²¹⁶ the Federal Constitutional Court emphasised that with certain inventory data, especially when transmitting and querying inventory data by assigning an IP address, the legislature must provide higher hurdles than before. The specific assignment of the IP address must also 'serve to protect or reinforce legal interests of at least exceptional significance' and a proportionate legal basis must be created for both the 'transmission of the inventory data by the telecommunications provider and for the retrieval of this data by the authorities' – in the sense of a double door model. This decision is also the reason why the reform of the Network Enforcement Act was delayed.

On October 6, 2020, the ECJ ruled in the *Privacy International* case²¹⁷ that EU law conflicts with national laws (here in Belgium, France and England) that provide for data retention. However, in situations in which a Member State is exposed to a serious national security threat, storage measures are possible if they are provided for by law, are limited in time to what is strictly necessary, are accompanied by effective protective measures and can be reviewed by a court or an independent administrative authority.

208 Ibid.

209 Federal Constitutional Court (2010), [231].

210 Ibid., [244].

211 Federal Gazette (2015).

212 Beck aktuell (2017).

213 Federal Network Agency (2019).

214 Directive 2002/58/EC.

215 Meister, A. (25.09.2019).

216 BVerfG, decision of 27 May 2020, case reference. 1 BvR 1873/13 et al.

217 ECJ, 6 October 2020, judgments in the cases Case C-623/17, *Privacy International*, and in Joined Cases C-511/18, *La Quadrature du Net and Others*, C-512/18, *French Data Network and Others*, and C-520/18, *Ordre des barreaux francophones et germanophone and Others*.



THEME F

Social, Economic and Cultural Rights

R.F.1 Does government policy include the Internet in employment, health and education policies, with particular reference to the rights of the International Covenant on Economic, Social and Cultural Rights (ICESCR)?

► **Indicator:** Evidence of the inclusion of a) the Internet and b) respect for the ICESCR in sector-specific strategies for employment, health and education

► **Indicator:** Evidence supporting Government analysis of the impact of the Internet on employment, health and education

The Federal Government has [ratified the UN social pact](#). In Germany it has the rank of a federal law.²¹⁸ The right to work (employment), health and education is guaranteed by Articles 7, 12 and 13 of the UN social pact.

In November 2018, [the Federal Government developed an implementation strategy for the Federal Government to shape digital change](#). Evidence supporting the Federal Government's analysis of the effects of the Internet on employment, health and education can be found in the Digital Agenda 2014-2017, the implementation strategy for digitalisation, the Federal Government's AI strategy, the white paper on digital platforms, the white paper on Work 4.0 and the gender equality strategy of the Federal Government.

Employees in the national training strategy²¹⁹ are included. The aim is to facilitate the career advancement of broad sections of the population and to boost the skilled workforce. Moreover, the intention is to enhance employability.²²⁰ The strategy also includes: promoting the digital economy in developing countries, cooperation with the private sector in the technology sector and the use of digital commerce.

According to a [study by Bitkom](#), the Internet is now the most important work equipment.²²¹ The Federal Ministry of Labour and Social Affairs has therefore started a [dialogue process on Work 4.0](#).²²² Germany is also involved in European research initiatives and strategies for the world of work 4.0. This includes the [EU Commission's white paper on the use of artificial intelligence](#).²²³

218 German Bundestag (2019b).

219 Federal Ministry of Education and Research (2020c).

220 Ibid.

221 Pols, A. (2012).

222 Federal Ministry of Labour and Social Affairs (2019).

223 European Commission (2020d).

The Act to Enhance Opportunities for Training and to Provide More Protection in Unemployment Insurance is part of the so-called training offensive on the labour market.²²⁴ It is meant to help bring employees into the structural change process towards digitalisation and to equip them with the appropriate skills for new requirements of a digitalised job market.²²⁵

The legislative report 'Digital Agenda 2014-2017' from 2018 documents the implementation of the strategy with measures in the following areas: 'Digital Infrastructures', 'Digital Economy and Digital Work', 'Innovative State', 'Shaping Digital Living Worlds in Society', 'Education, Research, Science, Culture and Media', 'Security, Protection and Trust for Society and Economy', and 'European and International Dimension of the Digital Agenda'.²²⁶

There are also specific strategies in the area of health (Digital Agenda 2014-2017),²²⁷ which address various issues. These include: the expansion of the eHealth initiative through stronger networking of self-administration in the health care system with the innovation activities of health care companies, ensuring the interoperability and security of IT systems, the development of a digital health information portal and the modernisation of the public health service (ÖGD) by providing digital communicable disease reporting and surveillance system.

In addition, there is the project to make outbreak events recognisable at an early stage and to enable target group-specific processing of data through the utilisation of artificial intelligence. The Corona app represents the latest example of the use of digital technology in the healthcare sector, developed and implemented in response to the COVID-19 pandemic.²²⁸

In the field of education, the Federal Government is committed to promoting digital skills.²²⁹ To this end, the strategy provides that: 'All people can use the opportunities offered by digitalisation. They should be able to help shape the digital transformation autonomously and deal responsibly with the risks. The 'Shaping Digitalisation' strategy²³⁰ considers the field of education from different angles. In addition to school education, the strategy includes measures in the field of training, further education and advanced training and the area of the competent society.²³¹

In August 2020 it was reported that seven federal states were planning to provide teachers at schools nationwide with a work email address and to make the use of these email addresses mandatory. The COVID-19 crisis had made it clear that the majority of teachers still do not have a work email address (with the exception of: Bremen, Brandenburg, Hesse, Hamburg and Saxony-Anhalt (voluntary)) and thus one of the basic digital channels in the school institution is not yet sufficiently available. The use of private email addresses regularly harbours data protection and cybersecurity risks. In addition, teachers in schools are to be equipped with a business laptop in

224 Federal Gazette (2018).

225 Ibid.

226 Ibid.

227 Federal Ministry for Economic Affairs and Energy (2017).

228 Federal Ministry of Health (2020b).

229 The Federal Government (2020).

230 Ibid.

231 Ibid.

the future. Ninety per cent of teachers currently carry out their activities without a work computer. Cloud solutions are also planned for digital teaching. It is still unclear how the financing for the purchase of work laptops for over 800,000 teachers nationwide will be secured.²³²

In addition to school and university education, digitalisation is also being promoted in the field of training and further education. The Indicators 87-90 show which strategies are being pursued in detail.

RF.2 Are the population and other individuals equally able to use the Internet to participate in cultural activities?

► **Indicator:** *Extent and type of differences in Internet access and Internet use between different communities/ethnic groups*

If the term communities is understood to be broadly based and if communities in the sense of groups with certain gender, age and educational attributions are included in the study, then the following stands out: about 95% of the German population use the Internet,²³³ around 80% are (also) smartphone users.²³⁴ There are large differences in usage with regard to a job/activity: some 96% of Germans with a job use the Internet, while only 68% of the unemployed do so. Usage is similarly distributed among the educational qualifications: 96% of those Germans with a higher educational qualification are online – in contrast to around 60% of the Germans with a low educational qualification.²³⁵ Differences in access to the Internet can also be found with regard to household income; in households with less than \$1,000 a month, only 40% access the Internet, whereas in households with \$3,000 and more at their disposal around 66% are active online.²³⁶ The gender as well as the age access gap is narrowing, but it is still recognisable; around 91% of men use the Internet every/or almost every day, while this applies to only 88% of women.²³⁷ Almost 99% of all Germans between 16 and 44 years of age access the Internet almost every day, while only around 70% of users over 65 years of age regularly access the Internet.²³⁸

In addition, slight regional differences can still be identified; the only federal states where Internet usage is below 80% are the eastern federal states (former German Democratic Republic).²³⁹ The difference between access to the Internet in urban regions (500,000 inhabitants and more) and rural regions also still differs by 6%.²⁴⁰

232 Rzepka, D. (14.08.2020).

233 Eurostat (2019b).

234 Newzoo (2020).

235 Initiative D21 (2020), p. 25.

236 Ibid., p. 41.

237 Federal Statistical Office (2020a).

238 Federal Statistical Office (2020d).

239 Initiative D21 (2020), p. 16.

240 Ibid.

There are no valid figures for Germany with regard to Internet use for different ethnic groups. With a view to the history of the Federal Republic of Germany, such figures are not regularly compiled, neither as a query or as self-attribution.

► **Indicator:** *Existence of a government policy on cultural heritage online*

In the coalition agreement, the current government stated: ‘Policies for culture and academia, media and education are policies for an open society, for freedom of opinion, academia and art. In view of the global threat to critical artists, intellectuals, journalists and scientists, but also out of our historical responsibility, we support an initiative for the freedom for art and academia, freedom of the press and of expression, also with regard to exile experiences.’²⁴¹

In the Federal Government’s ‘Shaping digitalisation’ implementation strategy (2020), a digitalisation strategy for the cultural sphere will also be formulated. Among other things, this should address the legal and ethical dimensions of digitalisation in the arts and culture.²⁴²

The preservation of the cultural heritage is a constant topic of German cultural policy.²⁴³ In 2011, at the initiative of the governing parties, the Bundestag proposed a digitalisation offensive for the cultural heritage and called on the Federal Government to push ahead with the development of the German Digital Library, to pay particular attention to long-term archiving and to provide copyright rules for dealing with orphan works.²⁴⁴

The [German Digital Library](#) was founded in 2007 as a joint project by the federal, state and local governments.²⁴⁵ It has been in regular operation since 2014. In the future, it should network the digital offerings of up to 30,000 German cultural and research institutions and thus make the nation’s cultural heritage accessible online for the entire population largely free of charge. By June 2020, more than 4,400 institutions had been registered that can provide access to their collections via the German Digital Library, including over 2,500 archives, 800 museums and 700 libraries. Around 500 institutions are already actively supplying data.

With its collection, the German Digital Library also contributes to the European portal [Europeana](#), a foundation established by the European Commission in 2005.²⁴⁶ Metadata cultural heritage assets are made available in a uniform data model.²⁴⁷ Europeana now offers access to more than 50 million objects in digitised form.

241 The Federal Government (2018c), p. 172.

242 Digital made in de (2020).

243 German Bundestag (2015b).

244 German Bundestag (2012).

245 German Digital Library (2020).

246 Europeana (2020).

247 Dröge, E. et al. (2015).

Digital formats are funded at the federal state level through the Cultural Foundation of the federal states.²⁴⁸ The joint project 'museum4punkt0' gave rise to an initiative in 2016 that receives funding from the Federal Government Commissioner for Culture and the Media in an overall amount of EUR 15 million. The aim of the project, within the framework of which various cultural institutions work together, is the development of new digital tools for presenting museum collections.²⁴⁹ Associated projects worth mentioning include 'Culture Digital',²⁵⁰ 'Digital ways to the museum',²⁵¹ 'Totally digital!'²⁵² and 'ZDF Kulturraum Digital'.²⁵³ The respective funding for these projects ranges from EUR 21,000 and EUR 5 million. All the projects aim to ensure that cultural institutions use, develop and design digital opportunities in order to create new spaces for cultural experiences. In turn, they aim to create easier, integrative access to art and culture, creative processes and new opportunities for exchange.²⁵⁴

► **Indicator:** *Constitutional or legal guarantee of freedom of artistic expression*

Artistic freedom is guaranteed in Article 5, Paragraph 3 of the Basic Law and has been differentiated and contoured by the Federal Constitutional Court in its case law.²⁵⁵ The concept of art is of key importance in determining the scope of protection. There shouldn't be a generally applicable definition, which is why the term 'open concept of art' is also used.²⁵⁶ It is *'the characteristic feature of an artistic expression [...] that, because of the diversity of its expressive content, it is possible to infer more and more far-reaching meanings from the representation by way of a continued interpretation, so that a practically inexhaustible, multi-level information transfer results.'*²⁵⁷

Artistic freedom is to be understood mainly as a right of defence. In addition, Article 5 (3) sentence 1 of the Basic Law also contains 'an objective, value-determining principle regulating the relationship between the field of art and the state.'²⁵⁸ The freedom of art must therefore also *'be taken into account in the relationship between private individuals, especially if artistic works are to be banned by state courts on the basis of private rights.'*²⁵⁹ Whether there is a

248 Cultural Foundation (2020).

249 Museum4punkt0 (2020).

250 Federal Cultural Foundation (2019).

251 Ministry of Science, Research and the Arts Baden-Württemberg (2018).

252 Federal Ministry of Education and Research (2018).

253 ZDF (2019).

254 More details can be found in the 2005 Third State Report on the Implementation of the 2005 UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions in and by Germany in the 2016–2019 reporting period. (The Federal Government (2020ff)).

255 E.g. BVerfGE 67, 213 (225) = NJW 1985, 261 (262) - anachronistic trait; BVerfGE 75, 369 (377) = NSiZ 1988, 21 (22) - Strauss caricature.

256 BeckOK GG/Kempen, 43. Ed. May 15, 2020, GG Art. 5 marginal no. 156.

257 BVerfGE 67, 213 (226 f.) = NJW 1985, 261 (262 f.) - anachronistic trait; BVerfGE 81, 278 (291 ff.) = NJW 1990, 1982 - Federal flag.

258 BVerfGE 30, 173 (188) = NJW 1971, 1645 - Mephisto; BVerfGE 119, 1 (21) = NJW 2008, 39 (40) - Esra.

259 BVerfGE 119, 1 (21) = NJW 2008, 39 (40) - Esra.

binding constitutional mandate to promote art or even individual participation rights is a matter of dispute. In any case, the BVerfG sees it as the state's task to shape and maintain a free artistic life.²⁶⁰ The democratically legitimised legislature is charged with the design of this protection. The scope of protection of artistic freedom is not limited to artistic activity itself.²⁶¹ The BVerfG has converted artistic freedom into a so-called 'work area' and 'effective area', both of which enjoy the constitutional protection of Article 5 (3) sentence 1 GG.²⁶²

Artistic works (starting from a certain creative level) are specially protected by the Copyright Act (UrhG),²⁶³ but also by the Art Copyright Act (KUG).²⁶⁴ Artistic freedom is often caught between general personal rights and protection of honour. After the European Commission presented regulatory proposals for a reform of copyright law in 2016, the Federal Ministry of Justice and Consumer Protection asked for comments from stakeholders and interested parties to serve as a basis for the Council negotiations in Brussels. All statements of opinion are available on the Ministry's website.²⁶⁵ Specific interest groups to be mentioned here are the Network Authors' Rights²⁶⁶ and the Copyright Initiative,²⁶⁷ which actively promote the interests of artists.

The new version of the Inter-State Media Treaty, concluded in 2020, also served to implement the EU directive on audiovisual media services and to adapt it to European requirements on copyright law.²⁶⁸ In this context, the European legal precedent of German law plays an important role, even if it is again clearly evident that European media structures are characterised by incoherence and, above all, that the European legislator is overloaded with often contradicting regulatory goals. As a further measure, the ministries of culture and the culture senates of the federal states formulated a joint declaration on cultural and artistic freedom in 2019. The aim is to expressly affirm the right to freedom and diversity in art and culture.²⁶⁹

The reduction in the VAT rate for e-publications introduced in 2018 was welcomed by the German government. Instead of 19%, the VAT rate has since been 7%, which means that print and e-media are treated equally.²⁷⁰

For this chapter, recommendations for various stakeholders are summarised in chapter 8.

260 BVerfGE 36, 321 (331) = NJW 1974, 689 - Record sales tax; BVerfGE 81, 108 (116) = NJW 1990, 2053 - State cultural law.

261 BeckOK GG/Kempen, 43. Ed. May 15, 2020, GG Art. 5 marginal no. 167-169.

262 BVerfGE 30, 173 (189) = NJW 1971, 1645 - Mephisto; BVerfGE 67, 213 (224) = NJW 1985, 261 (262) - anachronistic trait; BVerfGE 77, 240 (251) = NJW 1988, 325 - Herrnburger report; BVerfGE 81, 278 (292) = NJW 1990, 1982 (1983) - Federal flag; NJW 2006, 596 (597) - artist contract; BVerfGE 119, 1 (21 f.) = NJW 2008, 39 (40) - Esra; BVerfGE 142, 74 (96) = NJW 2016, 2247 (2248).

263 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (1965).

264 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (1907).

265 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (2020b).

266 Network Authors' Rights (2020).

267 Copyright Initiative (2020).

268 Federal Ministry for Economic Affairs and Energy (2020c).

269 Conference of Ministers of Education and Cultural Affairs (2019).

270 The Federal Government (2019a).



Openness

4

CATEGORY 0
OPENNESS

'The value on which the triumphant advance of the Internet is particularly based is freedom. We know that freedom can never be taken for granted, we have to gain and defend freedom again and again.'

Angela Merkel, Federal Chancellor, 2019

'The Internet must remain global and free.'

Peter Altmaier, Federal Minister for Economic Affairs and Energy, 2019

In what framework do the issues raised in the category of openness find expression in terms of harnessing the innovation potential of the Internet and protecting access to it for all members of society?

Ensuring non-discriminatory access to and expansion of the Internet in Germany falls within the single legal framework of the Telecommunications Act and the scope of the Federal Network Agency whose remit it is to implement the Act. In practice, especially outside of large cities, there is no comprehensive fast Internet access. With regard to Internet access for certain social groups, there are sometimes sector-specific national laws such as the Disability Equality Act and other international legal obligations, such as the one to promote barrier-free access to the Internet within the UN Convention on the Rights of Persons with Disabilities.

Questions on (digital) access to education and educational resources arise with the tense interplay of financial asymmetries and constitutional delimitation of competencies between the Federal Government and the federal states: related matters are predominantly the exclusive legislative and administrative competencies of the federal states (Art. 30 GG, Art. 70 GG); this is also an obstacle to the Federal Government's financial support for the federal states to deal with the digital transformation in the education system. An amendment to the Basic Law that came into force in April 2019 (Art. 104c GG) means that the federal government can now grant the federal states financial aid to increase the efficiency of the educational infrastructure.

With regard to the promotion of open educational resources, there would appear to be a positive consequence of the sometimes dramatic interruption of learning due to school closings in the wake of the COVID-19 pandemic, however, the sustainability of this still remains to be seen. However, the promotion of open educational resources is often carried out through individual projects without being the focus of specific legal and political reforms that could aim to remove related obstacles in copyright law, for example.

The added value of the use of open source software by authorities is increasingly being recognised, but deficits still exist primarily at the level of practical implementation, which often does not materialise or only gradually. With regard to access to public and publicly financed data, the opportunities that this opens up often remain untapped in practice.



THEME A

Policy, Legal and Regulatory Framework

○ A.2 Does the legal and regulatory framework facilitate innovation on the Internet for business, academia and civil society?

► **Indicator:** *Evidence of the adequacy of the legal and regulatory framework for the creation of new businesses and innovation by academia and civil society*

On the one hand, the legal framework for innovation in Germany is sound, as there are constitutional procedures that determine how companies can be founded and there is legal clarity. The legal bases in civil and company law include the HGB (commercial code), the GmbHG (legislation on limited liability companies), the stock corporation act (AktG), the act against restraints of competition (GWB), the act against unfair competition (UWG) and, in public law, the trade regulations (GewO) of the federal states as well as their special legislation.

There are also a large number of government advice centres and support for start-ups in certain sectors, as well as funding, for example, from the KfW Bank (a German state-owned development bank). As a member state of the European Union, Germany is also integrated into the European single market and thus benefits from the fundamental freedoms.²⁷¹

To enhance digital higher education, the Federal Ministry of Education and Research has approved a third funding line with which digital teaching and learning concepts are to be developed, tested and researched within individual disciplines and subjects.²⁷²

To foster innovation on the Internet it is also essential to facilitate the integration of research work and to fund it. This relates to legally embedding of the use of big data, but also the expansion of access options for academia in order to evaluate digital data through standardised data formats.

► **Indicator:** *Perceptions of companies' experiences with the regulatory environment for business and ICT, including Internet-based companies*

In spring 2017, the Federal Ministry of Economics presented a comprehensive white paper for a new digital regulatory policy.²⁷³ Prior to that there had been a consultation process lasting

271 European Union (2012).

272 Federal Ministry of Education and Research (2018b).

273 Cf. the following: Federal Ministry for Economic Affairs and Energy (2017).

several months with several statements from companies, associations, trade unions, non-profit organizations as well as from academia and civil society. The white paper calls for more transparency on the Internet, more rights of intervention in the event of abuse of market power, higher requirements for Over The Top services (such as WhatsApp and Skype) and for more incentives to expand the network infrastructure. The Internet association Eco, to which Facebook and Google also belong, and the Federal Association of Industry have criticised the tightening of regulations.²⁷⁴

The Bitkom association, which counts 2,700 companies in the digital economy in Germany among its members, published the results of a survey of 502 companies with more than 20 employees

in February 2020. Around 96% of the companies surveyed see digitalisation rather as an opportunity for their company and only 3% see it as a risk. In the case of digital platforms, 30% see predominantly risks for their companies, 45% see more opportunities, the rest see no effects or gave no assessment. The assessment also depends on the respective economic sector: 60% of retail companies see predominantly opportunities, while only 43% of service companies and 37% of industrial companies do.²⁷⁵ When asked about the greatest obstacles to the use of digital platforms, numerous aspects were mentioned, in particular the requirements for data protection and IT security.

Table 5: The greatest obstacles to the use of digital platforms in your own company (multiple answers, figures in percent)

	Platform users and operators	Non-platform users	Total
Data protection requirements	64	61	63
IT security requirements	55	62	58
Lack of qualified personnel	54	52	53
Lack of know-how	37	60	45
Insufficient budget	19	39	27
Lack of economic benefit	11	52	26
Legal uncertainties	26	23	25

Source: Bitkom: Digital Platforms. Chartbericht, February 2020, https://www.bitkom.org/sites/default/files/2020-02/bitkom_digitaleplattformen_2020.pdf, p. 21. Basis: All surveyed companies with 20 or more employees (2019: n = 502), multiple answers were possible.

274 Heide, D. (20.03.2017).

275 Bitkom (2020a). The survey was conducted in August and September 2019; however, agriculture and forestry, fisheries, public administration, defence, social security and education were not taken into account.

When asked which political measures would be meaningful for promoting the use of digital platforms, companies mentioned standardised regulations across Europe (53% of those surveyed) and more legal certainty for digital platforms (50%). Public funding for the development of digital platforms (36%), support for collaborations with other companies to develop digital platforms (32%), easing of data protection rules (29%), help with training of employees (13%) and adjustments to intellectual property rights (11%).



THEME B

Open Standards

B.3 Does the government promote the diversity of intellectual property licensing options, including free and open source software (FOSS)?

► **Indicator:** Government policy in relation to FOSS and other licensing options

The federal administration has long been focusing on the use of open source software. To this end, the [Open Source Software Competence Centre](#) was set up and expanded in 2011 for the nationwide exchange of information between IT experts.²⁷⁶ The Federal Office for Information Security (BSI) is committed to increasing the diversity of software, reducing monocultures and using the advantages of free open source software, as the [BSI](#) itself does.²⁷⁷

Germany has been a member of the [Open Government Partnership](#) since 2016, which so far covers 70 countries. In the Second National Action Plan 2019-2021, however, open source software is only addressed with a view to the federal state of Schleswig-Holstein, whose government parties set themselves the priority of using open source software in their coalition agreement of 2018.²⁷⁸

276 Federal Government Commissioner for Information Technology (2011).

277 Federal Office for Information Security (2020).

278 Open Government Germany (2019); Vitako (2019), p. 16 ff. In spring 2020, the coalition parties of the newly elected state government in Hamburg also agreed to use open source software more intensively, cf. Hamburgische Bürgerschaft (2020).

► **Indicator:** *Extent to which government software is used with various license options*

The actual use of free and open source software in federal administration is still very limited. In response to a minor inquiry about the federal administration's plans to use free and open source software, the Federal Government informed the Bundestag in August 2018 that open source software was being used in the federal data centres, especially on the central servers. In addition, in order to facilitate access to open source solutions, attention is being paid to creating open interfaces in IT systems.²⁷⁹ Moreover, when making purchases, users are regularly informed about alternative solutions, such as open source, for example.

In August 2019, the management consultancy PwC presented a strategic market analysis with a view to reducing dependencies on individual software providers on behalf of the Federal Ministry of the Interior, Building and Community. According to this, IT at the federal level is heavily influenced by Microsoft products: in 2018, 96% of the direct agencies used Microsoft Office and Windows; 69% also used Windows servers.²⁸⁰ The development and use of open source software is recommended as a possible strategy. However, this report also pointed out that opting for open source software is not irreversible. In 2003, the city of Munich started to migrate to an open source operating system, Linux, and open source office software but, in 2018, it decided to reverse the migration.

○B.4 Does the government promote and adopt standards to make it easier for people with disabilities to access the Internet and e-government services?

► **Indicator:** *Government policies and practices to ensure accessibility for people with disabilities*

The UN Disability Rights Convention²⁸¹ aims to further promote and substantiate the inclusion of people with disabilities. The contracting states also undertake to promote barrier-free access to ICT and the Internet.²⁸²

Barrier-free information technology with regard to public authorities of the federal government is standardised in the Disability Equality Act (BGG section 2a).²⁸³ In addition, the barrier-free

279 Federal Government (2018a).

280 Strategy& (part of the PwC network) (2019).

281 Federal Government Commissioner for Matters relating to Persons with Disabilities (2017).

282 Art. 9 (2) lit. g): The contracting states shall also take suitable measures to promote access for people with disabilities to the new information and communication technologies and systems, including the Internet.

283 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (2002).

information technology regulation of 12 September 2011 helps facilitate barrier-free access to ICT.²⁸⁴

With regard to digital accessibility, there is a lack of reliable figures on the current status of implementation in Germany. The Web Content Accessibility Guidelines 2.1 (WCAG 2.1), on which the Barrier-free Information Technology Ordinance (BITV) 2.0 is based (came into force on May 15, 2019), serve as the basis for the national strategy, which falls under the Disability Equality Act (BGG). The latter is based on the requirements of EU Directive 2016/2102 on the accessibility of websites and mobile applications of public bodies. The resulting minimum standards (conformity to EN 301 549) were finally incorporated into federal and state laws²⁸⁵ and apply to websites (including intranets and extranets), apps and electronic administrative processes (for these only from June 2021) of public bodies at federal, state and municipal level (administrations, authorities, offices, universities, clinics, companies in public sponsorship etc.). In addition to the minimum requirements for barrier-free access (keyword font sizes, contrasts, plain language, etc.), since September 2020, a binding declaration on barrier-free access and a feedback mechanism also have to be established there. On the date of mandatory implementation, the federal monitoring agency for accessibility of information technology will begin its work.²⁸⁶

In addition, on 28 June 2019, the EU Directive 2019/882 of the European Parliament and of the Council from 17 April 2019 on the accessibility requirements for products and services, the so-called ‘European Accessibility Act (EAA)’, came into force. The directive has to be implemented in national law by 28 June 2022 and – with a few exceptions – applied from 28 July 2025. It is aimed primarily at online trading.²⁸⁷

► **Indicator:** *Perceptions of people with disabilities in terms of accessibility policies and practices*

Regarding the perceptions of people with disabilities on the policy and practice of accessibility, the situation is hard to generalise and there is very little data. It is indeed possible to collect data on the use of the Internet by people with disabilities; this, in turn, allows conclusions to be drawn about existing structures of discrimination and exclusion. The Federal Government's Second Participation Report on the Living Conditions of People with Disabilities from 2016,²⁸⁸ but above all the study by Aktion Mensch e. V. and the media authorities, also from 2016,²⁸⁹

284 Federal Ministry of Justice and Consumer Protection (2011).

285 Accessible web design (2020).

286 Federal Office for Accessibility (2020); Simply participate (2019).

287 Federal Office for Accessibility (2019).

288 Federal Ministry of Labour and Social Affairs (2016).

289 Aktion Mensch e. V./die medienanstalten (2016).

shows a clear need for barrier-free access to the Internet. These reports clearly showed that: 'There are significant differences in the use of the Internet. It is used less by some groups with disabilities than by the general population. Particularly large differences were found for people with learning difficulties. For the latter group, the level of reading ability has a significant influence on the use of all media.'²⁹⁰



THEME C Open Markets

○ C.1 Is there an independent regulation of the communication markets in accordance with international norms and standards?

► **Indicator:** *Presence of an independent regulatory authority [for communications markets]*

The regulation of telecommunications markets is a sovereign task of the Federal Government. The central instrument for regulating the communications markets is the [Telecommunications Act \(TKG\)](#).²⁹¹ The aim of the law is a technology-neutral approach to regulating competition with regard to telecommunications and telecommunications infrastructures, although the protection of consumers and users of telecommunications services has also been given an important role.

The implementation of the law is the responsibility of the Federal Network Agency, which has to perform its tasks in an objective, transparent, non-discriminatory and proportionate manner (Section 2 (3) TKG). The Federal Network Agency (in accordance with the law on the Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railways [Section 1 BEGTPG](#)²⁹²) is an independent higher federal authority which, as a regulatory authority, promotes competition in the energy, telecommunications, postal and railway markets and ensures the efficiency of the infrastructures in this area. The responsibilities and assignment of tasks can be found in the Energy Industry Act (EnWG) and the TKG.

A multi-stakeholder forum in the context of communication market regulation is the '[Network Alliance Digital Germany](#)', which was initiated in 2014 by the Federal Ministry of Transport and Digital Infrastructure (BMVI). In addition to the BMVI and the Federal Network Agency, it includes

²⁹⁰ Ibid., p. 9.

²⁹¹ Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (2020a).

²⁹² Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (2017).

large German telecommunications companies and associations from the telecommunications industry.²⁹³

► **Indicator:** *Evidence of regulatory performance, including how communications companies, consumer groups, and other organizations perceive the quality of regulation*

An indication of the effectiveness and regulatory performance of the Federal Network Agency is already apparent in the fact that it is accepted by all stakeholders. One example of criticism, however, is the warning issued in 2018 by the mobile communications companies Deutsche Telekom, Vodafone and Telefónica of excessively strict conditions and too high costs; then again, politicians criticised the lack of effective sanctions if requirements are not complied with; after all, the desired area-wide network expansion will not be achieved in this way.²⁹⁴ In May 2020, the Federal Association of Broadband Communication (BREKO) criticised a recent decision by the Federal Network Agency because this would effectively give the existing network connections based on Deutsche Telekom's copper cables priority over fibre-optic connections laid all the way to buildings (Fibre to the x, FTTB).²⁹⁵

○ C.4 Is there sufficiently effective competition in communication access networks to protect the interests of users?

► **Indicator:** *Number of stationary and mobile broadband providers*

► **Indicator:** *Market shares of stationary and mobile broadband providers*

The number of stationary broadband connections in Germany is 34.6 million.²⁹⁶ Deutsche Telekom, as the market leader with 13.6 million stationary broadband customers, has a 39.4% share of these connections. In second place is Vodafone that, following its acquisition of Unitymedia in 2019, now has a market share of 30.6% with a customer base of just under 10.6 million. Their nearest rivals are 1&1, with 12.4% share, and Telefónica with 6.4%.²⁹⁷ There are also the smaller providers, EWE Group with 1.7%, Tele-Columbus with 1.7%, M-Net with 1.4%,

293 Federal Ministry of Transport and Digital Infrastructure (2017).

294 ZEIT Online (26.11.2018a).

295 Kommune 21 (2020).

296 These data have been collected globally since 2010 as part of the ITU and UNESCO Broadband Commission Reports (see Broadband Commission Reports (2020c)).

297 VATM/Dialog Consult (2019).

NetCologne with 1.2%, Deutsche Glasfaser with 0.6%, as well as other small competitors which together account for 4.6% of the market.²⁹⁸

The four companies Deutsche Telekom AG, Vodafone, the E-Plus Group and Telefónica Germany (with the brand O2) originally operated their own mobile networks in the mobile communications market. This changed with the takeover of the E-Plus Group by Telefónica Germany when only three network operators remained.²⁹⁹ When the 5G network auctions were completed, in June 2019, it was clear that there would once again definitely be a fourth network operator that would set up its own mobile network, namely, Drillisch Netz AG.³⁰⁰

The market share of each of current three network operators – based on their shares of the overall number of active mobile SIM cards in Germany of around 141 million – is roughly evenly distributed among all three competitors. Telefónica's share, at 32.2%, is only slightly higher than that of Deutsche Telekom AG, at 32.1%, however, Vodafone is the market leader with a share of 35.7%.³⁰¹ Besides the established companies mentioned above, which provide their own networks, there are more than 50 mobile phone providers, some of which are operated by large supermarket chains (Aldi, Edeka, Kaufland, Lidl, Penny) and use the networks of the three network operators.³⁰²



THEME D Open Content

O.D.4 Does the government promote the use of open educational resources (OER) and facilitate open access to academic and scientific resources?

► **Indicator:** *Educational policy framework relating to OER*

OER (Open Educational Resources) have political support in Germany. Development potential can be identified both in the financial arena and, with a view to broadly expanding skill sets starting with training for teachers, also in the continuing education and training apparatus, which

298 Ibid.

299 Federal Network Agency (2020a).

300 Federal Network Agency (2019a).

301 VATM/Dialog Consult (2019).

302 Tellarif (2020).

systematically reflects this. The Standing Conference of Ministers of Education and Cultural Affairs (KMK) and the Federal Ministry of Education and Research (BMBF) play the key roles here. The Conference of Ministers of Education has pointed out the central importance of OER³⁰³ in its strategy paper from 2016/2017 *Education in the Digital World*.³⁰⁴

The promotion of open teaching/learning materials in Germany is closely linked to the *policy drive to digitalise education*.³⁰⁵ As early as 2015, the government/federal state working group published its *recommendations on Open Educational Resources* and agreed with the opinion of large international organizations, such as UNESCO and the OECD, with regard to the great potential of OER.³⁰⁶ Since 2015, the Federal Government *has sponsored a large number of projects through the Federal Ministry of Education and Research (BMBF)*³⁰⁷ in the area of embedding OER in the education system; moreover, *OER barcamps*³⁰⁸ and *repositories as platforms for exchange have been formed*³⁰⁹ and an *OER information point was created*.³¹⁰ In the project '*Mapping OER-Designing educational materials together*', besides conducting an analysis of the current state of OER in Germany,³¹¹ a *practical framework* including recommendations for the further dissemination of OER in Germany was developed.³¹² The latest survey on the status of OER in Germany forms part of a UNESCO report.³¹³

This clearly shows that the legal provisions on intellectual property constitute a particular obstacle to OER practice in Germany and they need further reforms. OER activities can be found primarily in the areas of schools and universities. At the state level, the Hamburg Open Online University is highlighted as the most ambitious and best funded OER project at the moment, and the OERinfo funding programme at the federal level. Compared with other countries, in Germany, there have been few top-down and many bottom-up initiatives in the past; this is because the topic has long been neglected at the political level, according to the results of the study.³¹⁴

Germany also took an active part in the process of drafting the UNESCO recommendations on OER, which were adopted in 2019. The recommendations include developing conducive

303 Conference of Ministers of Education (2020).

304 Conference of Ministers of Education and Cultural Affairs (2016).

305 See, for example, the Federal Ministry of Education and Research (2016) – here, too, the importance of funding OER is emphasized.

306 Conference of Ministers of Education and Cultural Affairs, Federal Ministry of Education and Research (2015).

307 Federal Ministry of Education and Research (2016c) and (2020d); Further information on the projects can also be found in the special edition of the specialist magazine *Synergie* from the University of Hamburg: *Synergie Universität Hamburg* (2018).

308 OER camp (2020).

309 OER Content Buffet (2020).

310 OERinfo (2020).

311 Wikimedia Germany (2015).

312 Wikimedia Germany (2016).

313 Orr, D., Neumann, J.; Muuss-Merholz, J.; UNESCO (2017).

314 *Ibid.*, p. 9 ff.

general policy framework conditions as well as the promoting the development of sustainable OER models.³¹⁵

Funding is also increasingly being provided with a view to equal and, as far as possible, inclusive access to education in the area of OER. For the legislative period until 2021, there are plans to develop a national OER strategy under the leadership of the BMBF.³¹⁶ In addition, the Federal Government has launched the ‘WirLernenOnline’ – we learn online – platform as part of the ‘OpenEduHub’ project, which is being funded by the BMBF because of the COVID-19-related school closures. An innovative search enables central access to more than 40,000 openly licensed learning resources from a large number of repositories.

Yet, within the framework of the DigitalPact School (2019-2024),³¹⁷ with a funding volume of EUR 3.5 billion, there is no funding allocated for OER.

The Federal Government’s ‘DigitalPakt School’ programme - part of its ‘Digital Competence’ package of initiatives - will enable 43,000 schools to have fast Internet connections and a high-performance digital learning infrastructure.³¹⁸ For the period 2019-2023, the volume of federal funding is six billion euros.³¹⁹ Furthermore, the programmes ‘Vocational Training 4.0’ and the practical dialogue ‘Dual Training Digital’ provide support for the digitalisation of vocational training through, among other things, skills training for teachers at vocational schools.³²⁰ Digital skills are being promoted in specific areas in the health care professions by training professional staff to conduct video consultations and adapting the curricula accordingly.³²¹

► **Indicator:** *Arrangements for accessing academic and scientific resources for higher education institutions and students*

According to the definition of the Federal Ministry of Education and Research, Open Access means ‘that research publications are made available to the general public free of charge via the Internet – for example on a website, in an online journal or in a so-called repository.’³²²

Copyright holders have the right, under Section 19a Copyright Act (UrhG),³²³ to make their work available to the public. This also includes the authorisation to make the work available on the Internet without restriction and to publish it as open access. Universities offer their students

315 UNESCO (2019c).

316 German Bundestag (2020).

317 DigitalPakt School (2019).

318 The Federal Government (2019b), p. 13.

319 Ibid., p. 18.

320 Ibid., p. 13 f.

321 Ibid., p. 14.

322 Federal Ministry of Education and Research (2019).

323 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (1965).

and their academic staff access to a large number of resources via the university network or a Virtual Private Network (VPN). For this purpose, the universities usually conclude contracts with the respective publishers.³²⁴ The arrangements for the usage rights are usually made within the framework of licenses.³²⁵ The type of license must be expressly indicated in the work published online.³²⁶ There are different types of licenses. In addition to the Creative Commons license (CC), there are the DIPP licenses, the digital peer publishing license, the DPPL, the modular DPPL and the free DPPL.³²⁷ They offer the option of making special arrangements and, for example, exclude printed copies from the permission for distribution in advance. These agreements can be combined with the CC license.³²⁸

The scope of the license can be further specified and restricted (by naming the copyright holder (BY), non-commercial use (NC); a processing ban (ND)). In this case, however, a CC BY ND license is sometimes no longer considered an open license, because the free editing of the materials is an integral part of OER and open access for many users. The German Commission for UNESCO has provided practical guidelines for the use of Creative Commons licenses.³²⁹

Copyright holders also have a so-called secondary publication right under certain conditions.³³⁰ According to § 38 Abs. 1 UrhG³³¹ copyright holders may publish their work elsewhere one year after publication in a magazine or series, unless otherwise agreed in the publishing contract. Section 38 (4) UrhG provides for special requirements for academic publications.³³²

In recent years, an increasing number of Open Access publications have been funded. For example, the German Research Foundation (DFG) and now the vast majority of German universities and non-university research institutions offer funding for Open Access publications.³³³

A commitment by the government to open access can be found in the open access strategy of the Federal Ministry of Education and Research.³³⁴

324 Herbold, A. (23.09.2019).

325 OERinfo (2020a).

326 OERinfo (2020).

327 Gesis (2020).

328 Hbz (2020).

329 German Commission for UNESCO e. V.; Kreutzer, T.; Wikimedia Germany (2016).

330 Federal Ministry of Education and Research (2019).

331 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (1965).

332 Section 38 (4) UrhG: '(4) The author of a scientific contribution which results from research activities at least half of which were financed by public funds and which was reprinted in a collection which is published periodically at least twice per year also has the right, if they have granted the publisher or editor an exclusive right of use, to make the contribution available to the public upon expiry of 12 months after first publication in the accepted manuscript version, unless this serves a commercial purpose. The source of the first publication must be cited. Any deviating agreement to the detriment of the author shall be ineffective.'

333 German Research Foundation DFG (2020).

334 Federal Ministry of Education and Research (2016b).

The importance of non-discriminatory access to online resources for society and education, in particular, became clear as a result of the COVID-19 crisis. Both classes in schools and lectures at colleges and universities took place online during this time. Publishers expanded their range of available teaching and learning materials for universities,³³⁵ but sometimes stopped these offers again. Databases such as [JSTOR](#) also expanded the access to knowledge.³³⁶

OD.5 Does the government require ISPs to manage network traffic transparently, impartially and neutrally, without discriminating against certain types of content or content from certain sources?

► **Indicator:** *Regulatory agreements and practice related to net neutrality and competition for online and network services*

Net neutrality means ‘equal treatment of all data packets during their transmission on the Internet’.³³⁷ Specifically, this means: Internet service providers do not carry out any preliminary assessments in order to influence the data transmission.³³⁸ It is also considered a fundamental principle of the Internet. In Germany this topic is controversial in the current context of the 5G expansion.³³⁹ The update of the Body of European Regulators for Electronic Communication (BEREC) Guidelines on the Implementation of the Open Internet Regulation is intended to ensure that network neutrality is still maintained in the course of the 5G expansion.³⁴⁰

The Federal Network Agency publishes an annual report on the enforcement of the network neutrality regulations in Germany.³⁴¹ The following are evaluated: the business models and practices of the companies, especially zero-rating offerings and flat-rate mobile phone tariffs; the traffic management of the company, especially security and youth protection filters, ordering a DNS block due to copyright infringement by third parties; transparency measures, data transfer rates and consumer complaints and the efficiency of a quality monitoring mechanism.³⁴²

The report also provides information on the possibility of sanctions.³⁴³ The Federal Network Agency did not have to take any formal enforcement decisions during the reporting period, as the companies voluntarily ended the violations of the principles of net neutrality.³⁴⁴

335 Free University of Berlin (2020b).

336 JSTOR (2020).

337 European Parliament (2015).

338 Federal Network Agency (2018).

339 Rudl, T. (23.06.2020).

340 Body of European Regulators for Electronic Communication BEREC (2020).

341 Federal Network Agency (2020a).

342 Ibid., p. 6.

343 Ibid., p. 23 f.

344 Ibid., p. 23.

On the positive side, there was no network overload in Germany despite the increased use of telephone, video conferencing and streaming.³⁴⁵

The rules on net neutrality are laid out in the Regulation (EU) 2015/2120 on measures for access to the open Internet.³⁴⁶ The aim of the regulation is: *'to create common rules to safeguard the equal and non-discriminatory treatment of data traffic in the provision of Internet access services and the associated rights of end users.'*³⁴⁷ On the one hand, users are to be protected, but also the infrastructure of the Internet as such is to be safeguarded. The Federal Network Agency is responsible for enforcing Regulation (EU) 2015/2120 on access to the open Internet. The annual reports focus on the following issues: ensuring access to the open Internet, transparency measures, supervision and enforcement and sanctions.³⁴⁸

Competition - In Germany there is competition between several companies. The Federal Ministry for Economic Affairs and Energy (BMWi) wants to create a new regulatory framework for the digital economy.³⁴⁹ For this purpose, a draft of the Act against Restraints of Competition (GWB) was submitted³⁵⁰ to strengthen mechanisms of abuse control over the powerful digital companies and to tighten the regulation of dominant companies. At the same time, innovation is to be promoted by equality (market and data access). The Federal Cartel Office will be given powers that allow it to take provisional measures under less stringent conditions to effectively protect competition. Regulating mergers will be facilitated, although the aim is to reduce the burden on medium-sized companies.³⁵¹

345 Ibid.

346 Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 on measures for access to the open Internet and amending Directive 2002/22/EC on universal service and user rights in electronic communications networks and services and the Regulation (EU) No. 531/2012 on roaming in public cellular networks in the Union, ABl. 2015, L 310/1. All articles without reference to a law or regulation are those of Regulation (EU) 2015/2120.

347 Federal Network Agency (2020c).

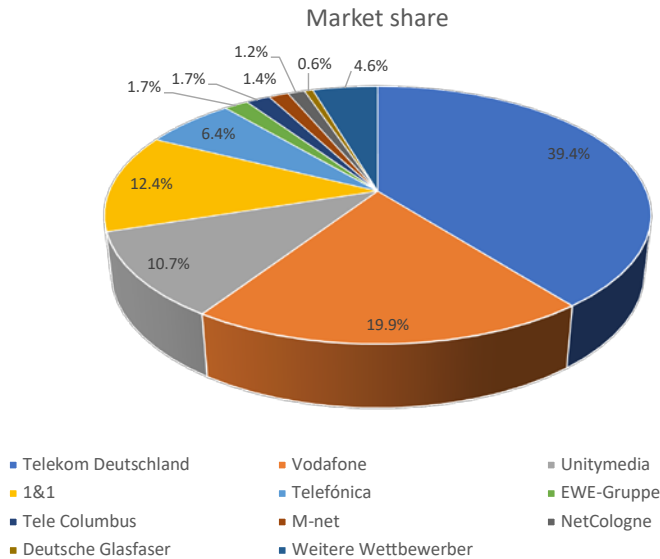
348 Ibid.

349 Federal Ministry for Economic Affairs and Energy (2020d).

350 Federal Ministry for Economic Affairs and Energy (2020b).

351 Ibid.

Figure 6: Market shares of broadband connections in Germany in the 2nd quarter of 2019



Source: Dialog Consult; vatm: 21. TK Market Analysis Germany 2019, October 2019, https://www.vatm.de/wp-content/uploads/2019/10/VATM_TK-Marktstudie_2019_091019.pdf, p. 13.



THEME E Open Data and Open Government

OE.1 Have laws been passed requiring open access to public and publicly funded data with adequate privacy protection, and are these laws being implemented?

► **Indicator:** Existence of a legal framework for access to open data that is in line with international standards and privacy requirements

A right to information can result from different legal bases depending on the circumstances. A general entitlement arises from the Freedom of Information Act (IFG),³⁵² designed as a right

352 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (2005).

to information or access to files. Everyone is entitled (everyone's right). You do not have to be legally or actually affected. Special regulations on access to information in special laws take precedence over the Freedom of Information Act and block a claim under the Freedom of Information Act. This applies regardless of whether the special regulation is narrower or wider than the Freedom of Information Act. The right of those involved in the proceedings to inspect files, Section 29 of the Administrative Procedure Act (VwVfG), does not constitute a *lex specialis* regulation, so that it remains equally important to the IFG.³⁵³

The entitlement according to IFG is not unlimited, but is restricted by the reasons stated in Sections 3-6 IFG. The exceptions to be made plausible accordingly by the authority also reflect the competing fundamental rights positions from Art. 1 (1), 2 (1) GG.³⁵⁴

With the E-Government Act, Germany is taking a further step towards transparent government action and open data.³⁵⁵ The regulatory content of the legislation is the duty of the authorities of the direct federal administration agencies to publish the unprocessed data, so-called raw data, that they have collected.³⁵⁶

The Federal Government's Artificial Intelligence Strategy (2018)³⁵⁷ provides that '*In the field of public administration AI offers the opportunity to provide information and services in a more targeted, more precise and low-threshold manner for citizens as well as within the administration.*' AI is to be used for sovereign tasks and the administration's competencies are to be adapted. As a measure, the Federal Government intends to play a pioneering role in the continued use of AI in administration and thus to contribute to improving the efficiency, quality and security of administrative services. This also includes the provision of open administrative data for unrestricted further use.³⁵⁸

► **Indicator:** Evidence of the extent to which open data sources are available and used online

With GovData, a data portal was created in Germany that bundles and visualises the data provided by federal, state and local administrations.³⁵⁹ The data is divided into 13 categories and regularly contains more than 1,000 documents.³⁶⁰ Germany scores well in the Open

353 Federal Ministry of the Interior, Building and Community (2020b).

354 Ibid.

355 Federal Ministry of Justice and Consumer Protection (2013).

356 Federal Ministry of the Interior, Building and Community (2020b).

357 Federal Government (2018d).

358 Ibid.

359 Federal Ministry of the Interior, Building and Community (2020b).

360 The individual categories also include: 'Population and society', 'Education, sport and culture', 'Energy', 'Health', 'Justice, legal system and public security', 'Agriculture, fisheries, forestry and food', 'Government and public sector', 'Regions and cities', 'Environment', 'Transport', 'Economy and finance' and 'Science and technology'; GOVDATA (2020).

Data Barometer of the World Wide Web Foundation. In particular, the ‘readiness’ aspect, i.e. the willingness of the state, the population and companies to use the open data provided, is high.³⁶¹ Germany achieved a similar value for the ‘implementation’ factor, which represents the extent to which data is published by the state’s government in an accessible, up-to-date and transparent manner. The value for the ‘emerging impact’, which measures the extent to which the publication of government data has measurable positive effects on politics, the economy and civil society, is worse.³⁶²

E.2 Do government departments and local government agencies have websites that are available in all official languages and with all major browsers?

► **Indicator:** *Government policy to ensure the provision of websites in the appropriate language and with appropriate browser access and evidence of effective implementation*

At the federal level, German is the only official language; this is stipulated in Section 23 (1) of the Administrative Procedure Act.³⁶³ In some regions there are regional and minority languages as optional official languages.³⁶⁴

The websites of the federal and state governments can be used with all common browsers as far as can be determined. They are primarily in German, but often also offer selected content in English and other foreign languages as well as in those regional and minority languages that are spoken in the respective federal state.

The 2002 Law on Equal Opportunities for People with Disabilities urges the public authorities, i.e. above all federal and state ministries and their subordinate bodies, institutions and foundations under public law, to eliminate and prevent discrimination against people with disabilities.³⁶⁵ For the use of information technology, this goal is specified in the ordinance for creating barrier-free information technology according to the Disabled Equality Act (Barrier-free Information Technology Ordinance – BITV 2.0). According to this, websites and other offers, applications and information technology services must be designed to be barrier-free.³⁶⁶

361 OpenData Barometer, World Wide Web Foundation (2020).

362 Ibid.

363 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (1976).

364 See, for example, the Brandenburg Law on the structuring of the rights of the Sorbs/Wends in the state of Brandenburg, which in Section 8 (2) grants this minority the right to use the Lower Sorbian language in institutions of the state and the municipalities in their traditional settlement area. Bravors Brandenburg (1994).

365 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (2002).

366 Federal Ministry of Justice and Consumer Protection (2011): § 3. The EU Directive 2016/2102 is implemented with the Disability Equality Act and the updated barrier-free information technology regulation, see European Union (2016b).

This also includes explanations in sign language and in plain language on the homepage of an offer. In plain language, main clauses are used almost exclusively. Compound words are not written together, but the individual components are separated and connected with a hyphen.³⁶⁷ The Federal Agency for Civic Education, an institution of the BMI, also offers specific content in plain language.³⁶⁸ In accordance with the specifications of EU Directive 2016/2102, a monitoring body was established which is based at the Knappschaft Bahn See. The highest federal authorities and the federal states will provide a report to it every three years – for the first time on June 30, 2021 – on the status of the barrier-free accessibility of their digital offers.³⁶⁹

► **Indicator:** *Share of government services with websites (value/ranking in the UNDESA online services index)*

The value of the online services index (OSI) compiled by UNDESA, which measures the use of ICT by governments in the provision of public services at the national level on a scale of 0 to 1, results in a value of 0.9306 for Germany in 2018. The higher the value, the better the result for the respective country in relation to other countries.³⁷⁰

The E-Government Development Index (EDGI) is compiled to measure e-government capacities; the values are on a scale from 0.5 to 1 and Germany had a value of 0.8765 in 2018. This was the twelfth highest value worldwide. Overall, Germany ranks among the countries classified as ‘very high’ in a UN-wide comparison of the assessment of developments in e-government.³⁷¹ It is interesting that Germany fell by 13 places in its overall ranking (EGDI) between 2018 (12th place) and 2020 (25th place) and thus the worst ranking since the measurement began in 2003. In this respect, ranking 25th has to be viewed rather critically. Generally, the values for Germany in various Internet-related indices are of limited significance if the different values – including economic performance – are aggregated and digital-specific subcategories are not disaggregated.

For this chapter, the recommendations for various stakeholders are summarised in chapter 8.

367 Federal Government (2020e).

368 Federal Agency for Civic Education (2020b).

369 Knappschaft Bahn See/Federal Monitoring Agency for Accessibility of Information Technology (2020).

370 United Nations (2018a).

371 Ibid.



A

Accessibility
to All

5

CATEGORY A
ACCESS

'The Internet gives us access to an unprecedented wealth of information from a multitude of sources of completely different quality.'

Frank-Walter Steinmeier, Federal President, 2017

'The Internet is a public good. Access to it must be open to everyone.'

Katarina Barley, former Federal Minister of Justice, 2018

'In order for people to really communicate on the Internet as equals, access must remain free and open for everyone.'

Heiko Maas, Federal Foreign Minister, 2018

What determines the questions raised in this category regarding access to and use of the Internet?

The importance of unhindered access to the Internet is increasingly being recognised in Germany in a large number of legal contexts. The Federal Court of Justice explained, in 2013, with reference to private law compensation for Internet outages:

'Usage of the Internet is an economic good whose constant availability, for some time now, (...) is also typically of key importance in the private sphere for a self-supporting lifestyle and where a disruption in its function as such has a significant effect on the material basis of the lifestyle', particularly against the backdrop that (...) 'the Internet has developed into a medium that plays a decisive role in shaping the lives of a large part of the population'.³⁷²

Against this background, the indicators of Category A - Access highlight infrastructural deficits for supplying a continuously growing Internet community in Germany. With regard to Internet speed and the expansion of increasingly important infrastructures, such as broadband and fibre optics, Germany is lagging behind in international comparisons, contrary to its long-standing plans. The availability of fast Internet access is particularly problematic in rural areas. In terms of pricing, fast Internet access – if available – is comparatively affordable in relation to the distribution of income. The nationwide expansion of fibre optic networks seems to be progressing very slowly.

The consistently high share of the population that uses the Internet continues to grow; the people who do not use the Internet tend to be in the older age groups, in groups with no or little formal education and among the unemployed. With regard to the promotion of media and

372 BGH, judgment of 24 January 2013 - III ZR 98/12 - Koblenz Regional Court (LG).

information skills and related fields in schools, it is possible to point to considerable investments in infrastructure. In the future, there could be greater focus on organizational and structural issues.

The concept of Internet users is also proving to be a challenge. While it is constantly used in politics and the media, there is a suggestion that usage or usage time and non-usage can be considered separately. However, this concept is based on an antiquated understanding of 'Internet use'. Internet use today is permanent, mobile and increasingly detached from stationary or mobile devices. Are permanent 'Internet users' the ones who drive a 'smart car' or wear a wristwatch with an Internet connection? Is it still possible to be 'offline' today? The indicators in this section show that there are still deficits in the autonomous and confident use of the Internet.



THEME A

Policy, Legal and Regulatory Framework

AA.1 Is statistical information on Internet access and use regularly collected on a systematic basis by the national statistical systems or other competent authorities?

► **Indicator:** *Arrangements for the collection of aggregated and disaggregated statistical information from various sources, including the inclusion of relevant questions in household surveys*

Statistical information on access to and use of the Internet is regularly collected by the Federal Statistical Office. According to EU regulation 808/2004 on community statistics, Germany is obliged to collect statistical information on information and communication technologies.³⁷³ From 2021, these surveys will be integrated into the microcensus, a representative household survey of 1% of the population annually, which has been carried out for more than 60 years and covers topics such as family, living situation, job and training. 3.5% of the people who take part in the microcensus are supposed to then be asked some questions about Internet access and Internet use, for which there is an obligation to provide information under the Microcensus Act. For other characteristics, voluntary information is collected, e.g. type, frequency and individual purposes of Internet use. In addition, there will be questions about concerns and obstacles that discourage individuals from certain Internet activities (e.g. online purchases). Additional

373 For the following, see Hundenborn, J. ; Enderer, J. (2019).

aggregated information is also publicly available in the database of the Federal Statistical Office on the use of ICT in companies.³⁷⁴

► **Indicator:** *Availability of independent household surveys and other evidence of aggregated Internet access and usage*

There are special household surveys from various agencies on Internet access and use of private households. Since 1997, an annual survey has been carried out on behalf of ARD and ZDF, which is intended to show as precisely as possible the use of the Internet in Germany over time. The results are presented in the journal *Media Perspektiven*, which is freely accessible online.³⁷⁵ The D21 initiative, to which numerous companies belong, has been conducting regular studies on the degree of digitalisation of society in Germany since 2001; these results are published on the Internet.³⁷⁶ The private company Statista offers quick access to data published by third parties, which processes such data and usually makes it available for a fee.³⁷⁷

A.A.4 Does the government have a policy and programme in place to implement universal access to reliable, affordable broadband, and is it being effectively implemented?

► **Indicator:** *Adoption of a strategy for universal access and evidence of effective use of resources*

In Germany, broadband expansion is being promoted with the aim of improving nationwide coverage. By the end of 2025, the aim is for whole Germany to be supplied via gigabit networks; by 2021, the intention is for all commercial areas, schools and hospitals to already be connected to the gigabit network.³⁷⁸ The broadband atlas, initiated by the BMVI,³⁷⁹ shows which regions have been provided with which technology and the broadband transmission rates. In the future, fibre optic technology, in particular, will be installed. Germany still clearly lags behind other countries in this respect. For example, at the end of 2018, only around 88% of households in Germany had access to high-speed Internet with a speed of at least 50 megabits per second (Mbit/s). However, since 2014, the plan had been for all households in Germany to have Internet connections with data speeds of at least 50 Mbit/s by the end of 2018.³⁸⁰

374 Destatis (2020).

375 Cf. see Beisch, N.; Koch, W.; Schäfer, C. (2019).

376 Most recently, initiative D21 (2020).

377 Statista (2020).

378 Federal Ministry of Transport and Digital Infrastructure (2020a).

379 Federal Ministry of Transport and Digital Infrastructure (2020b).

380 Delhaes, D. (16.06.2019).

► **Indicator:** *Statistical evidence of progress on the way to universal access, aggregated and disaggregated with special consideration, for example, of gender, age, place of residence, ethnicity and disability*

Broadband expansion in Germany is clearly lagging behind when compared internationally. The speed of Internet connections in Germany has doubled overall in the past three years, but there are considerable regional fluctuations with regard to rural regions and the eastern federal states.³⁸¹ While fast broadband Internet (≥ 50 Mbit/s) was available for around 98% of all households in Bremen, Hamburg and Berlin at the end of 2019, this was only the case for around 76-78% of households in Mecklenburg-Western Pomerania and Saxony-Anhalt.³⁸²

According to a report by the British comparison portal 'Cable.co.uk', Germany, with an average download rate of 25 Mbit/s, is far behind other countries and ranks 27th in the world.³⁸³ This is mainly due to the lack of fibre optics cables; in Germany, only four percent of all households are supplied by fibre optic cables. This means that the country falls below the OECD average and ranks far behind other countries.³⁸⁴ The insufficient speed applies to mobile data as well as to stationary Internet connections.³⁸⁵ In terms of the cost structure, Germany does not occupy a leading position: if you look at the Inclusive Internet Index 2020, Germany only ranks 20th out of 100 in the Affordability category (this category examines the access costs in relation to income and the degree of competition on the Internet marketplace).³⁸⁶

Nevertheless, Germany recorded some 35 million broadband connections in 2019, and therefore there has been steady growth for years. The vast majority of these are still DSL connections (around 25 million in 2019).³⁸⁷ While only 25% of households in Germany had access to the Internet in 2000, it was almost 90% in 2019.³⁸⁸ Almost 100% of 14- to 49-year-old Germans now use the Internet. Access to the Internet also depends on educational qualifications: 96% of those with a higher education entrance qualification (*Abitur*) have access to the Internet, but only 72% of those with a certificate of qualified lower secondary school completion (*Hauptschulabschluss*).³⁸⁹

381 Verivox (2019b).

382 Federal Ministry of Transport and Digital Infrastructure (2019), p. 7; Full version: Federal Ministry of Transport and Digital Infrastructure (2019a).

383 Cable UK (2020).

384 OECD (2019b).

385 Speed test (2020).

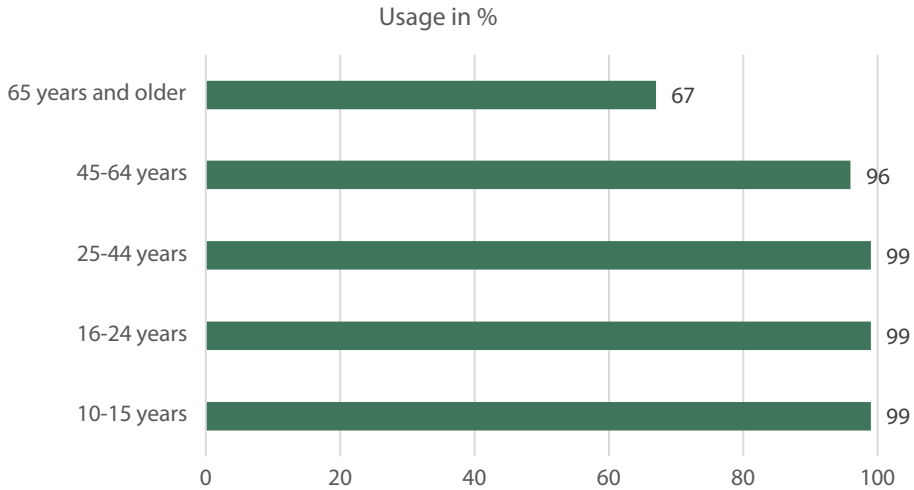
386 The Inclusive Internet Index 2020 (2020).

387 VATM/Dialog Consult (2019), p. 11.

388 ITU (2018a) also at Eurostat (2019a).

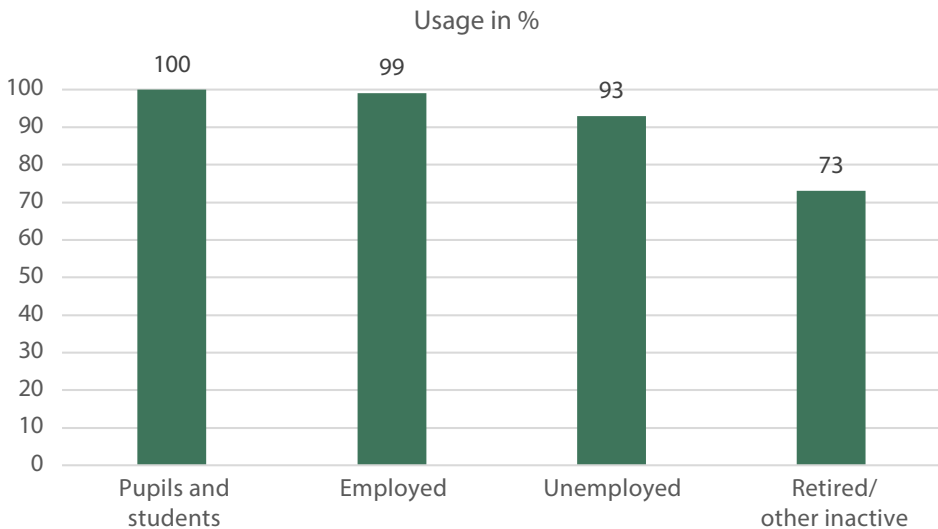
389 VIR Association of Internet Travel Sales (2020), p. 37.

Figure 7: Internet usage in 2019 by age



Source: Federal Statistical Office, Internet usage by people by age group in %, 2020, https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Einkommen-Konsum-Lebensbedingungen/_Grafik/_Interaktiv/it-endung-alter.html.

Figure 8: Internet usage in 2019 by social status



Source: Federal Statistical Office, Internet use of people by social status in %, 2020, https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Einkommen-Konsum-Lebensbedingungen/_Grafik/_Interaktiv/it-endung-soziale-position.html.

In addition to searching for information about goods and services, according to the Federal Statistical Office, sending emails is one of the most popular activities on the Internet, as is participation in social networks and online banking.³⁹⁰

In addition, the Federal Government has decided to support the principles of the Contract for the Web proposed by Berners-Lee in 2018.³⁹¹ The governing parties had previously agreed that there should be a legal right to access to fast Internet by 2025.³⁹² As early as 2013, the Federal Court of Justice, in a ruling, emphasised the great importance of access to the Internet.³⁹³ As an instrument of participation, Internet access is also included in the social welfare shopping basket.³⁹⁴



THEME B

Connectivity and Usage

AB.1 What proportion of the population uses the Internet, with what frequency, and is this share growing?

► **Indicator:** *Percentage of people who have ever had access to the Internet, aggregated and disaggregated*

The number of people (aged 16–74 years old) who have never used the Internet is comparatively low for Germany at 5% for 2019. In 2008 the share was still 20%, so it has fallen by 15 percentage points since then.

The proportion of those who have never used the Internet is highest among people of older age (from 54 to 74 years). However, the proportion of people in this age group who have never used the Internet in their lifetime has fallen from 50% in 2008 to only 15% in 2018.³⁹⁵

390 Broken down by gender (no major deviations) here: Federal Statistical Office (2020a); broken down by age (large variance) here: Federal Statistical Office (2020d).

391 Contract for the Web (2019).

392 Federal Government (2018e).

393 Federal Court of Justice (2013).

394 In the sub-area of *messaging*, see the justification in the draft act for the determination of standard needs as well as for the amendment of the second and twelfth books of the social security code: German Bundestag (2016b).

395 Eurostat (2019b).

For people with little or no formal education, the proportion of those who have never used the Internet is still relatively high at 11%; in contrast, only 1% of people with a high level of formal education stated that they have never used the Internet. In relation to the ratio of rural to urban population, there is hardly any difference, with 5% and 4% with 5% and 4% of the relative group of people.³⁹⁶ In the group of people who do not use the Internet, the unemployed represent a clearly visible and too large group, at 7%.

Table 6: People who have never used the Internet, 2019

Group of people	Value in %
All individuals	5
Individuals, 16–34 years old	0 (insignificant)
Individuals, 35–44 years old	1
Individuals, 45–54 years old	1
Individuals, 55–64 years old	7
Individuals, 65–74 years old	13
Individuals with little or no formal education	11
Individuals with intermediate formal education	4
Individuals with high formal education	1
Individuals who live in cities	4
Individuals who live in rural areas	5
Individuals who live in a household with broadband access	2
Individuals who live in a household with Internet access but no broadband access	7
Unemployed Individuals	7

Source: EUROSTAT, individuals – Internet use, April 2020, <https://ilp.de/pwdz>.

► **Indicator:** *Share of households with Internet access*

The Federal Statistical Office reported a value of 91% for the proportion of households with Internet access in Germany in 2019; this means an increase of 18% since 2009. Of the one-person households without a child, only 84% of the cases have Internet access, while 93% of the

³⁹⁶ Ibid.

two-person households without a child and even 100% of the three-person households without a child have Internet access. 99% of households with one adult and at least one child and 100% of households with two persons and at least one child have Internet access. There are also differences in Internet access with regard to the monthly net income of a household. Only 80% of households with a net monthly income of less than 1,500 euros have Internet access, whereas 99% of households with a monthly net income of more than 3,600 euros have Internet access.³⁹⁷

► **Indicator:** *Number of Internet users per hundred people, aggregated and disaggregated, according to frequency of use*

According to the [Federal Statistical Office](#), 91% of the population in Germany uses the Internet. At the time of the survey, 88% of them had used the Internet in the first quarter of 2019 within the last three months, 1% more than three months ago but within the last year and 2% more than a year ago. Even 100% of 16- to 24-year-olds indicated that they use the Internet. Among the 10-to-15-year-olds and 25-to-44-year-olds it was 99%, among the 45-to-64-year-olds the proportion was 96%. Individuals who are 65 years and older use the Internet the least, the proportion was 67%.³⁹⁸ A detailed discussion of these values can also be found in indicator 83.

► **Indicator:** *Number of social media (social networks, microblogs, messaging, user-generated video streaming) users per hundred people, aggregated and disaggregated*

With regard to the [recording of usage behaviour](#) on social media, the German Association for the Digital Economy (BVDW) differentiates between the three categories 'Networks, blogs and communities', 'Social media platforms' (for the exchange of images, videos and music) and 'Messenger services'. Based on this subdivision, it can be determined that 79% of the population use 'networks, blogs or communities', 53% of them at least daily. 88% use 'social media platforms' such as Instagram, YouTube, Spotify or Snapchat, 92% use 'messenger services' such as WhatsApp. These numbers have hardly changed compared to a comparable [survey in 2018](#).³⁹⁹

► **Indicator:** *Number of visits to social media websites (as defined above) per hundred people*

Exact figures on the number of all visits to social media sites are not available for Germany. For this reason, other, only partially equivalent data are used at this point. While the number of

³⁹⁷ Federal Statistical Office (2019f), p. 10.

³⁹⁸ Ibid., p. 14.

³⁹⁹ Borchers, D. (17.10.2019); BVDW (2018), p. 49.

users of social media barely changed in 2019 compared to 2018, the duration of use of social media has increased significantly, with users finding it increasingly difficult to correctly assess the time spent. According to these figures, women spent an average of 106 minutes a day on social media on weekdays, an increase of 28 minutes compared to 2018, while men spent an average of 81 minutes on social media on weekdays, 16 minutes more per day than in 2018.⁴⁰⁰

Data for the time spent on social media in 2019 have not yet been published. However, the data compiled at the end of 2017 show that the younger the age group, the longer the period of use. In 2018, 14- to 24-year-olds spent an average of 99 minutes per day on social media, while 55- to 69-year-old users only spent 57 minutes per day on social media.⁴⁰¹

In relation to the share of users on the most popular social media platforms, it can be seen that WhatsApp (69%) has by far the highest number of users, ahead of YouTube (55%), Facebook (49%), Instagram (25%) and Twitter (13%).⁴⁰²

Overall, there is a trend towards increased usage time on social media in the entire population, which is also reaching younger and younger people through apps like TikTok and at the same time also connecting older people with one another through established networks like Facebook on platforms and websites.⁴⁰³

AB.3 What proportion of the population subscribes to communications/broadband services and is this share increasing?

► **Indicator:** *Percentage of people who own a mobile phone, aggregated and disaggregated*

While the main indicator asks for ‘subscribers’ to communication and broadband services, the different attributions, as owners/subscribers and non-subscribers, cannot be disaggregated on the basis of the data collected.

The Consumer and Media Analysis (VuMA) for 2020 concluded that 91.1% of people over the age of 14 in Germany are equipped with a mobile or smartphone.⁴⁰⁴ This means an increase of 0.5 percentage points compared to VuMA 2019.⁴⁰⁵

400 Ibid.

401 Ibid.

402 Hasebrink, U.; Hölig, S. (2020), p. 71.

403 Borchers, D. (17.10.2019).

404 VuMA (2020), p. 50. It should be noted that these findings are based on four survey phases from October 2017 to April 2019, see p. 108.

405 VuMA (2019), p. 60. The findings here are based on four survey phases between October 2016 and March 2018, see Appendix p. II.

In the age groups between 14 to 49 years, around 99% of the respective age groups use a mobile phone. Mobile phone usage is lower for people aged 50 and over. In the age group 50 to 59, 95.8% still use a mobile phone, in the age group of 60- to 69-year-olds it is 89.9%, and in that of the 70-year-olds and older only 64.5%.⁴⁰⁶ It is also noticeable that among the 70-year-olds and older, the proportion of male smartphone users (71.7%) strongly exceeds the proportion of women (59.2%), while in the other age groups the proportion is similarly high or women make up a higher share.⁴⁰⁷

► **Indicator:** *Number of stationary broadband subscriptions per hundred registered people, aggregated and disaggregated*

First of all, it should be noted that 91% of households in Germany have a fixed Internet connection, 90% of households have a stationary broadband connection.⁴⁰⁸ Since the number of household members varies, the number of stationary broadband subscriptions per thousand people cannot be determined.

A closer look reveals that in the western federal states (91%) a higher proportion of households have a stationary broadband subscription than in the eastern federal states (87%). This can also be explained by the fact that the east is more rural, the population is older and the pensions are lower. The 'divides' of age, urban/rural setting and income may accumulate here.

The availability of a broadband connection also varies with regard to household incomes: 79% of households with a net income of less than 1,500 euros have a stationary broadband connection, for 1,500 to 2,300 euros it is 88%, from 2,300 to 3,600 euros 94% and for households with a net income of at least 3,600 euros, the share is 98%.⁴⁰⁹

► **Indicator:** *Number of individual active mobile broadband subscribers per hundred people, by bandwidth, aggregated and disaggregated*

For mobile broadband use, data from the OECD from the 2nd quarter of 2019 shows that there are 87 mobile broadband subscriptions per 100 people in Germany with a data speed of at least 256 kbit/s with which the Internet was accessed in the last three months.⁴¹⁰

Based on the breakdown of the connection speeds that are included in the subscriptions of mobile Internet users, there has been an increase in LTE technology (4G) since 2017. While

406 VuMA (2020) under the selection: 'Personal use of cell phones/smartphones: Yes'.

407 Ibid., Under the selection: 'Personal use of cell phones/smartphones: Yes' + 'Gender'.

408 Federal Statistical Office (2018a), p. 10 f.

409 Ibid.

410 OECD (2020).

there were only 44.9 million LTE subscriptions and 64.8 million subscriptions with UMTS/GSM technology (3G and 2G) in 2017, 59.1 million people had an LTE subscription in 2019. The share of LTE technology in mobile subscriptions has consequently increased from 41% to 55%.⁴¹¹

AB.4 Which access barriers are identified by users and non-users of the Internet?

► **Indicator:** *Perceptions (of users and non-users) of barriers to their Internet access and Internet use, aggregated and disaggregated, from household surveys and/or other sources*

Data on the perception of Internet users on the one hand and non-users, i.e. people without Internet access on the other, are available in particular from an annual situation report on the digital society from the D21 initiative. The most recent report for 2019/2020 is based on more than 20,000 interviews with German citizens aged 14 and over that were conducted between August 2018 and July 2019.⁴¹²

14% of the respondents were non-users. The main reasons given by them for not using the Internet were a general lack of interest in the Internet or in the medium itself (78%), classifying Internet use as too complicated (33%) and the expectation of not being able to benefit from Internet use (30%). Concerns about security (12%) or the feeling of being monitored on the Internet (10%) are mentioned much less often. This concern is mentioned by 21% of non-users in the eastern federal states, and by only 5% in the western federal states.⁴¹³

Not only non-users but also people who use the Internet perceive obstacles to Internet access. At the time of the survey, only around 15% of those in employment used telework, working from home or remote working. Those who do not use this give reasons why it is not possible in their job (60%) or why it is not possible in their company (30%). Only 15% (decrease of 11 percentage points compared to the previous year) state that they are not interested in the possibilities of remote working.⁴¹⁴ Due to the COVID-19 pandemic, however, the spread of remote working among office workers is likely to have changed significantly, at least temporarily.

Coronavirus will also boost working from home in Germany in the long term. Figures from a study by the Bavarian Research Institute for Digital Transformation showed that working from home among working Internet users increased by around 8 percentage points at the beginning of the pandemic. Above all, however, the frequency of working from home has increased. For

411 Federal Network Agency (2019), p. 58.

412 Initiative D21 (2020), p. 6.

413 Ibid., p. 18.

414 Ibid., p. 50.

many of the respondents who were working from home for the first time during the pandemic, their employers had not allowed this beforehand.⁴¹⁵

There are no up-to-date polls regarding possible barriers for people with disabilities. However, Section 12 a (1) of the Equal Opportunities for People with Disabilities Act (BGG) stipulates that federal government agencies should make their websites and mobile applications accessible. In addition, according to Section 5 BGG, targets should also be agreed between companies and business associations, on the one hand, and associations of people with disabilities, on the other hand, in respect of how accessibility should be established.⁴¹⁶



THEME C Affordability

AC.1 Are mobile phones with Internet connectivity affordable for all population groups?

► **Indicator:** *Costs for a) entry-level mobile phones and b) smartphones as a percentage of the monthly GNI per capita*

In 2019, according to the Home Electronics Index, people in Germany paid an average of EUR 48 for a new mobile phone and EUR 492 for a smartphone. Compared to the previous year, the price of mobile phones decreased by 11.5% and the price of smartphones increased by 0.7%.⁴¹⁷

In 2019, the price of a new mobile phone was 1.6% of the average monthly gross national income (GNI) per capita. For a new smartphone, this proportion was 13.9%.⁴¹⁸

415 Stürz et al. (2020).

416 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (2002).

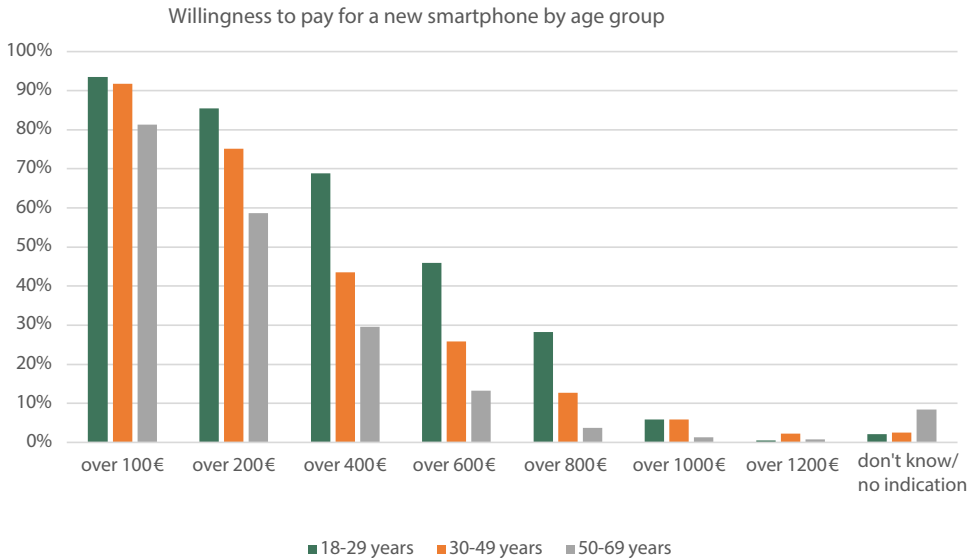
417 BVT/gfu Consumer/Home Electronics GmbH/GfK (2019), p. 3.

418 Calculated on the basis of: Federal Statistical Office (2019d), p. 18: 42,545 euros gross national income per person – 3,545 euros per month.

► **Indicator:** Perception of affordability by users and non-users, aggregated and disaggregated

A study carried out by verivox in 2019 found that just under a quarter of 18- to 29-year-olds (23%) would spend 801 to EUR 1,000 on a new smartphone. Among the 30- to 49-year-olds, the acceptance of such a high price was 7%, while among the 50- to 69-year-olds it was only 2.4%.⁴¹⁹

Figure 9: Price perception when buying a new smartphone



Source: verivox: Every fourth person under 30 would spend EUR 1,000 on a smartphone, October 2019, <https://www.verivox.de/nachrichten/jeder-vierte-unter-30-wuerde-1000-euro-fuer-ein-smartphone-output-1115855/>.

In a market study carried out in 2019, 47.5% of those surveyed said that when buying a new smartphone or mobile phone, they pay more attention to the price than to the brand of the device. On the other hand, 40.4% primarily paid attention to the brand of the smartphone, 12.1% could not judge this.⁴²⁰

419 Verivox (2019).

420 VuMA (2020), p. 3.

A.C.2 Is broadband access and use affordable for all population groups?

► **Indicator:** Monthly costs for a stationary entry-level broadband connection and usage as a percentage of the monthly GNI per capita

► **Indicator:** Monthly costs for an entry-level mobile broadband connection and its usage as a percentage of the monthly GNI per capita

► **Indicator:** Availability or unavailability of free or low-cost access

The [European Commission](#) last compiled country-specific prices for standardised offers for stationary broadband connections in 2018. In Germany, the cheapest offer was EUR 19.29 per month. A connection with 30-100 Mbit/s in Germany costs at least EUR 24.12. Internet connections with fast download speeds (at least 100 Mbit/s) cost at least EUR 27.33 per month.⁴²¹ With an [average monthly GNI per capita](#) of 3,454 euros⁴²² the cheapest broadband offer accounted for 0.6%. The subscription to an Internet connection with at least 100 Mbit/s was available for 3.7% of the monthly GNI per capita.

In 2019, the European Commission also compiled the country-specific prices for mobile broadband connections in the form of standardised ‘[user baskets](#)’. The cheapest user shopping cart (shopping cart 1) contained 100 MB data volume, 30 calls and 20 SMS and cost EUR 5.98 per month in Germany. Offers with 500 MB data volume, 100 calls and 40 text messages were available for EUR 7.98 per month. The cheapest price for an offer that included 1 GB of data volume, 300 calls and 80 SMS was EUR 9.95.⁴²³ This means that the prices for mobile Internet access have fallen compared to the previous year (example user shopping cart 1: cost around EUR 8 in 2018, around EUR 6 in 2019).

Subscribing to the cheapest user shopping cart accounts for 0.2% of the [average monthly GNI per capita](#).⁴²⁴ When using the 1 GB offer, this share is 0.3%.

According to [Bitkom's Smart City Index](#), the population and guests were able to access free public WiFi in 89% of German cities in 2019. However, such network access was only offered outside the city centre by 17% of the cities, and in only 38% of the cities was the public WiFi unlimited in terms of data and time frames.⁴²⁵ There are a total of 29,797 [public hotspots](#) in Germany.⁴²⁶

421 European Commission (2018), p. 27 ff.

422 Federal Statistical Office (2019d), p. 3.

423 European Commission (2019), p. 64.

424 Federal Statistical Office (2020d), p. 3.

425 Bitkom (2020a), p. 13.

426 Europakarte.org (2020).



THEME D Equitable Access

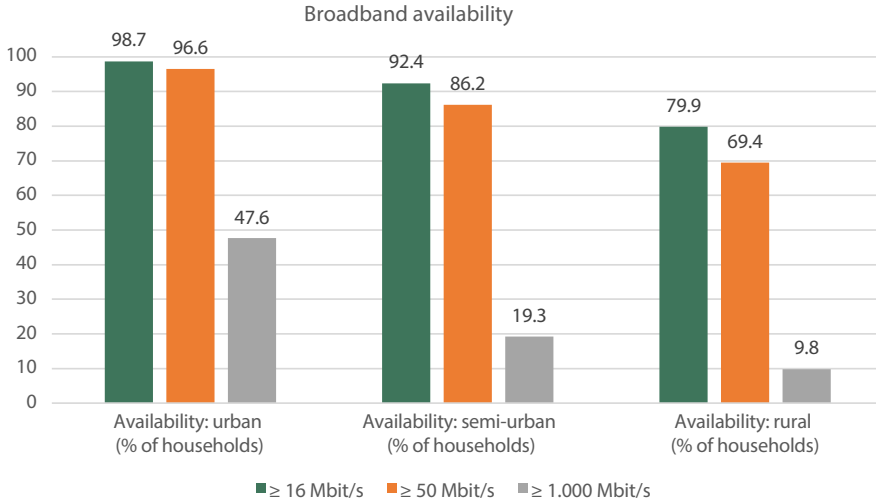
AD.1 Are there significant differences in broadband access and use between regions and between urban and rural areas?

► **Indicator:** *Geographic coverage of broadband networks in urban and rural areas, by bandwidth level*

According to the results from 2019, the availability of broadband Internet for households in Germany for connections with at least 16 Mbit/s is 94.6%, with at least 50 Mbit/s is 90.2% and with at least 1,000 Mbit/s is 34.1%.⁴²⁷

There are geographical differences in broadband availability, as the following graphic shows.

Figure 10: Broadband availability in Germany 2019



Source: BMVI: Current broadband availability in Germany (end of 2019), 2019, https://www.bmvi.de/SharedDocs/DE/Publikationen/DG/breitband-verfuegbarkeit-ende-2019.pdf?__blob=publicationFile, p. 13.

427 Federal Ministry of Transport and Digital Infrastructure (2019a), p. 7.

Municipalities with a population below 100 people/km² are referred to as rural here; municipalities with a population of 100 or more people/km² are semi-urban; municipalities from 500 people/km² are considered urban.⁴²⁸

A closer differentiation according to broadband categories and spatial categories shows that in rural communities and small towns with fewer than 10,000 people, more than 10% of households do not have broadband access with 16 Mbit/s or more:

Table 7: Broadband availability across all technologies in Germany 2019 (in % of households)

Classification Size of population	≥ 16 Mbit/s	≥ 30 Mbit/s	≥ 50 Mbit/s	≥ 100 Mbit/s	≥ 200 Mbit/s	≥ 400 Mbit/s	≥ 1000 Mbit/s
Large big city ≥ 500,000	99.3	98.4	97.6	95.7	93.3	89.9	76.4
Smaller big city ≥ 100,000	98.7	97.2	96.4	93.5	89.2	83.7	37.8
Larger medium-sized town ≥ 50,000	97.9	96.4	95.6	90.1	85.5	78.7	29.8
Smaller medium-sized town ≥ 20,000	96.1	94.0	92.4	84.7	77.5	66.3	24.1
Larger small town ≥ 10,000	93.1	89.8	87.3	76.0	65.5	53.9	22.3
Small town ≥ 5,000	89.3	85.7	81.9	68.0	52.8	38.2	16.6
Rural community ≤ 5,000	84.4	80.4	74.9	54.8	36.1	22.7	13.4

Source: BMVI, report on the broadband atlas. Part 1: Results, June 2019, https://www.bmvi.de/SharedDocs/DE/Anlage/DG/Digitales/berichtzum-breitbandatlas-mitte-2019-results.pdf?__blob=publicationFile.

428 Federal Ministry of Transport and Digital Infrastructure (2019), p. 13.

► **Indicator:** *Number of mobile broadband subscribers and Internet users, aggregated and, if possible, broken down by urban and rural areas and in different regions*

There are 70,527,905 mobile broadband connections in Germany⁴²⁹ and an average of 85 contracts per 100 registered people.⁴³⁰ As regards the transmission rate, mobile phone users in urban areas achieve better results than in semi-urban areas; the average transmission rates achieved are lowest in rural areas.⁴³¹

AD.5 Do adults in all age groups use the Internet equally?

► **Indicator:** *Proportion of adults in different age groups using the Internet, as well as frequency and type of use, including a breakdown by gender*

According to the surveys of the Federal Statistical Office from 2019, 91% of Germans use the Internet, 93% of the male population and 88% of the female population. The majority of Germans (90%) use the Internet every or almost every day. Young people tend to use the Internet more often than older people. Significant discrepancies in terms of gender can only be found among those aged 65 or over: 75% of men and 60% of women use the Internet.⁴³²

429 OECD (2019a).

430 European Commission (2018), p. 6.

431 Broadband measurement (2020), p. 50.

432 Federal Statistical Office (2019e), p. 14 f.

Table 8: Internet usage by frequency, gender and age, 2019

	Internet usage	Internet usage within the last 3 months	Thereof... every/ almost every day several times a day at least 1 x a week less than 1 x a week
Total	91%	88%	90%	84%	8%	2%
Men	93%	91%	91%	85%	8%	2%
16–24 years	99%	99%	98%	96%	/	/
25–44 years	100%	99%	98%	95%	/	/
45–64 years	97%	94%	90%	83%	8%	2%
65 years and older	75%	69%	76%	64%	17%	6%
Women	88%	85%	88%	82%	9%	3%
16–24 years	100%	100%	99%	97%	/	/
25–44 years	99%	99%	98%	96%	2%	/
45–64 years	95%	92%	87%	79%	10%	3%
65 years and older	60%	53%	64%	51%	26%	9%

Source: Federal Statistical Office, economic calculations, 2019,

https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Einkommen-Konsum-Lebensbedingungen/IT-Nutzen/Publikationen/Downloads/IT-Nutzen/private-haushalte-ikt-2150400197004.pdf?__blob=publicationFile, p. 14 f.

Most Germans who have been online within the last three months use the Internet to send and receive emails, to search for information about goods and services, to make purchases or place orders for private use, to use instant messaging services and for reading online news/newspapers and magazines. There are clear differences by sex of at least 10% only when searching for information on health topics, which 77% of women use, but only 59% of men.

Table 9: Internet activity by gender

	Total	Men	Women
Sending/receiving emails	89%	89%	90%
Telephoning/video calls	59%	58%	60%
Participation in social networks	54%	53%	56%
Use of instant messaging services	80%	87%	82%
Uploading and sharing your own content on websites	37%	37%	38%
Search for information about goods/services	89%	89%	89%
Making purchases/orders for personal use	84%	85%	83%
Search for information on health topics	68%	59%	77%
Reading online news/newspapers/magazines	71%	76%	69%
Sale of goods/services	29%	30%	28%
Online banking	60%	62%	58%
Listening to music	53%	58%	49%
Writing opinions on political or social topics on websites	12%	14%	10%
Participation in consultations or votes on political, social or local topics on the Internet	17%	18%	16%
Job search	17%	17%	17%
Use of storage space (cloud computing)	31%	35%	28%
Smart home usage	9%	11%	7%
Completed online course	8%	9%	7%
Use of online learning materials	17%	19%	16%
Communicated with teachers/students through educational websites	7%	7%	6%
Organising accommodation through a specialised website/app	17%	18%	17%
Organising accommodation through another website (including social networks)	8%	8%	7%
Organising a driving service via a specialised website/app	3%	3%	2%
Organise a driving service through another website (including social networks)	1%	1%	1%

Source: Federal Statistical Office, economic calculations, 2019, https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Einkommen-Konsum-Lebensbedingungen/IT-Nutzen/Publikationen/DownloadsIT-Nutzen/private-haushalte-ikt-2150400197004.pdf?__blob=publicationFile, p. 16 ff.

► **Indicator:** *Perception of the barriers to Internet access and Internet use as well as the value of Internet access and Internet use for users (if available), broken down by age and gender*

According to the Digital Index of the D21 Initiative, 86% of Germans aged 14 and over used the Internet in 2019, which was 2% more than in the previous year. Mobile Internet was used by 74% (6% more than in the previous year).⁴³³ There were hardly any discrepancies between the Internet use of the highly educated (97% Internet use) and people with a medium level of education (92% online), while the low educated only used the Internet to a proportion of 64%.⁴³⁴ However, this can be explained by the fact that around 50% of the people in this group are older than 60 years and female – both groups with below-average Internet use.

14% of the respondents do not use the Internet.⁴³⁵ 78% cited a lack of interest in the Internet as the main reason for non-use, which is slightly more common among men (81%) than among women (76%). The top 3 factors that could motivate non-users to use the Internet are the recognition of a clear advantage (25%), an introduction to how the Internet works (17%) and ease of use (17%).⁴³⁶

Surveys by the Federal Statistical Office also found that 8.9% of German households did not have Internet access in 2019.⁴³⁷ The most common reason for a lack of Internet access was a lack of need (67%), followed by a lack of knowledge (42%), too high acquisition (22%) and usage costs (20%), concerns about data protection and privacy (19%) and the ability to access the Internet from another location (11%). No household gave the unavailability of high-speed Internet access in the region as a reason.⁴³⁸

Of the respondents in the D21 study who use the Internet, 46% said that it would have a negative impact on daily life if the Internet and digital devices no longer existed tomorrow.⁴³⁹ Among 14- to 19-year-olds, even 86% agreed with this statement. 76% of those surveyed were convinced that in five years, at the latest, it will hardly be possible to do without the Internet. A strong or very strong change due to digitalisation is expected above all in the area of purchasing goods and services (71%). At 85%, 14- to 19-year-olds expect this change even more than the general population. Digitalisation was generally rated as positive by 41% of all respondents. In the medical/health care sector, 69% of those surveyed expected major to very major changes, 48% rate this as rather positive. In the education system, too, almost two thirds of those surveyed, at

433 Initiative D21 (2020), p. 12.

434 Ibid., p. 14.

435 Ibid., p. 18 f.

436 Ibid., p. 19.

437 Federal Statistical Office (2019e) - calculated on the basis of the household projections on p. 9 - 3,637 of 40,802 households.

438 Ibid., p. 12.

439 Initiative D21 (2020), p. 32 f.

65%, expected strong or very strong changes regardless of age, which 50% of all respondents perceived to be rather positive.⁴⁴⁰



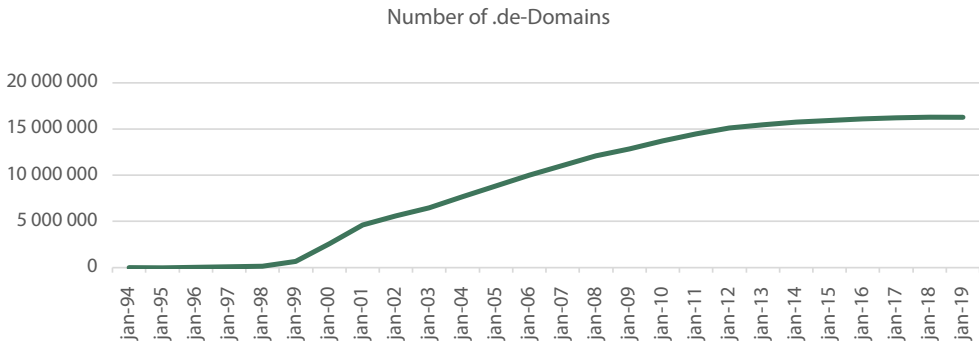
THEME E Local Content and Language

AE.1 How many Internet domains and servers are there in the country?

► **Indicator:** Number of domains registered (including ccTLDs⁴⁴¹, gTLDs⁴⁴² and IDNccTLDs⁴⁴³) per thousand people and, if available, trend

The number of registered .de domains is currently around 16.49 million.⁴⁴⁴ This corresponds to about 180 domains per 1,000 people.⁴⁴⁵ In 2018 the number of .de domains was around 16.28 million, in 2017 it was 16.22 million and in 2016 the number was 16.13 million.⁴⁴⁶ An increasing trend can be seen, as the following graphic shows:

Figure 11: Growth development of .de domains since 1994



Source: DENIC: Domainliste, 2020, https://www.denic.de/fileadmin/public/stats/DENIC_Domainliste.xlsx.

440 Ibid.

441 Country-specific top-level domain (e.g. .de).

442 Generic top-level domains.

443 Internationalized country code top-level domains (IDN ccTLDs) are ccTLDs that use the non-Latin based script of the home country.

444 Denic (2020a).

445 Ibid.

446 Denic (2020b).

► **Indicator:** Number of secure web servers per million people and trend, if available

In order to determine the number of servers in Germany, it is also useful to take a look at the number and area of data centres in Germany. Data centres are self-contained spatial units such as server cabinets, server rooms, parts of buildings or entire buildings in which at least three physical servers are installed.⁴⁴⁷ Such data centres are widespread but vary in capacity. This is categorised based on the area of the data centre. The following table shows the number of different data centres and their development:

Table 10: Number of data centres in Germany by data centre category in 2007, 2013 and 2017

Data centre category	2007	2013	2017
Server cabinet (3–10m ²)	33,700	30,500	30,500
Server room (11–100m ²)	18,100	18,100	19,900
Small data centre (101–500m ²)	1,700	2,150	2,500
Medium data centre (501–5,000m ²)	210	280	330
Large data centre (over 5,000m ²)	45	70	90

Source: Borderstep Institute, update 2017: Data centres in Germany: A study to illustrate the economic importance and the competitive situation, <https://www.bitkom.org/sites/default/files/file/import/Kurzstudie-RZ-MarktBitkom-final-20-11-2017.pdf>, p. 6.

The number of servers in the data centres increased by 18% to around 1.9 million between 2013 and 2016. The number of servers that are not run in data centres was around 400,000 in 2016. If the servers in the data centres and those outside the data centres are added up, there is a total of 2.3 million servers in Germany in 2016. The area of the data centres in 2017 was 2 million square meters, an area the size of 280 soccer fields.⁴⁴⁸

If you relate the number of servers from 2016 to the current population level in Germany,⁴⁴⁹ a number of 38,462 servers per million people can be determined.

447 Hintemann, R. (2018), p. 3.

448 Hintemann, R. (2017), p. 6.

449 Federal Statistical Office (2020f).

AE.4 Is there a significant and growing volume of Internet content in various local and indigenous languages, including locally generated content?

► **Indicator:** *Proportion of the population whose primary language and script are available on leading online services*

For the population structure of Germany, the microcensus from 2019 recorded that 21,246,000 people with an immigration background in the broader sense (born in Germany themselves, at least one parent born abroad) live in Germany, including 13,682,000 people with their own immigration experience (immigrated in the course of their lifetime).⁴⁵⁰ The share of people with an immigration background in the total population was 26% in 2019.⁴⁵¹

In the context of the 2018 microcensus, 63% of the households surveyed, in which at least one person has an immigration background, stated that German was predominantly spoken here. The number of household members with an immigrant background played a role here; in 95% of the households where only some of the relatives had an immigrant background, German was predominantly used to communicate. This proportion fell to 44% if all members had an immigration background.⁴⁵²

A language other than German was predominantly spoken in 9.7% of the total households surveyed. The most common languages spoken in these households were Turkish, Russian, Polish or Arabic. The following table shows the proportions of the various languages in proportion to the predominantly non-German-speaking households.⁴⁵³ Specific Internet offers of the German news portals with the widest reach that address foreign-language users in Germany in other languages are not known.

450 Federal Statistical Office (2019).

451 Federal Statistical Office (2019b).

452 Federal Statistical Office (2019a).

453 Federal Statistical Office (2018), Table 18.

Table 11: Main spoken languages in predominantly non-German speaking households by language, 2018

Main language spoken in the household	Share of households in which German is not mainly spoken
Turkish	14.0%
Russian	13.0%
Polish	9.2%
Arabic	8.0%
English	5.9%
Italian	4.5%
Spanish	3.7%
French	1.6%
Other European language	21.4%
Other Asian language	7.3%
Other African language	3.8%
Other language	7.3%

Source: Federal Statistical Office: Population and Employment, 2018, https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Migration-Integration/Publikationen/Downloads-Migration/migrationsverbindungen-2010220187005.xlsx?__blob=publicationFile, Table 18.

These data, collected as part of the microcensus, are the only statistics available that provide information about the languages spoken in Germany. However, detailed language statistics are not available.⁴⁵⁴

► **Indicator:** *Availability of content on government websites in all languages with significant user groups within the population*

As regards the availability of government websites in different languages, on 10 out of 19 websites checked⁴⁵⁵ information was only available in German and English. These ten websites were exclusively websites of federal ministries, including the [Federal Ministry for Health](#), the [Federal Ministry for Labour and Social Affairs](#) and the [Federal Ministry for Family Affairs, Senior Citizens, Women and Youth](#). With the websites of the [Federal Ministry for Economic](#)

454 Adler, A. (2018), p. 20.

455 The websites of the *Bundestag*, the *Bundesrat*, the Federal Government and the 14 federal ministries as well as the Integration Commissioner and the family portal of the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth were considered as websites of the legislature and the executive.

Affairs and Energy, the Federal Ministry for Justice and Consumer Protection and the websites of the Federal Government and the Bundesrat, 4 of the 19 relevant Internet addresses offered information in German, English and French.

The content of the website of the Federal Office for Migration and Refugees was available in six languages, namely German, English, Turkish, Russian, French and Arabic.⁴⁵⁶ There was a choice of seven languages on the Federal Foreign Office's website: German, English, French, Spanish, Portuguese, Arabic and Russian.⁴⁵⁷ The Family Portal of the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth offered information in even more languages: with German, English, Bulgarian, Spanish, French, Greek, Croatian, Italian, Polish, Portuguese and Romanian there are eleven languages.⁴⁵⁸

Only the Bundestag website offers a larger selection of languages. Here the choice was between up to 19 different languages for specific content: Arabic, Bulgarian, Chinese, Danish, German, English, French, Greek, Italian, Croatian, Dutch, Polish, Portuguese, Romanian, Russian, Serbian, Spanish, Czech and Turkish.⁴⁵⁹

Information on the current issue of COVID-19 has been made available in a variety of languages. Information was available in seven languages on the Federal Government's website,⁴⁶⁰ information was available in 16 languages on the website of the Federal Ministry of Health, which was set up specifically for COVID-19⁴⁶¹ and on the website of the Federal Government Commissioner for Migration, Refugees and Integration, information on COVID-19 can be found in 19 languages.⁴⁶²

456 Federal Office for Migration and Refugees (2020).

457 Federal Foreign Office (2020).

458 Family portal (2020).

459 German *Bundestag* (2020).

460 Federal Government (2020d).

461 Federal Ministry of Health (2020).

462 Federal Government Commissioner for Migration, Refugees and Integration (2020a).



THEME F

Capabilities / Competencies

AF.1 Do school and university curricula include training in ICT, media and information literacy aimed at effective and secure use, and are these curricula implemented in practice?

► **Indicator:** *Policy on school curricula, including media and information literacy, intercultural dialogue and training in ICT skills.*

► **Indicator:** *Evidence of suitable educational curricula at primary, secondary and tertiary level*

Education at schools and universities in Germany is basically a matter for the federal states, so the structure can be different in each federal state. In the Standing Conference of Ministers of Education and Cultural Affairs (KMK) the responsible state ministries agree on common strategies.

Media education was repeatedly a topic discussed by the KMK. In its declaration ‘Media Education in Schools’ in 2012, the KMK stated: ‘Learning with media and learning via media is consistently shown in the curriculum and education plans of the federal states, but the type, scope and detail of the information differ significantly. It would be desirable to update and accentuate media education in the individual subjects and to formulate their own interdisciplinary criteria for media education.’⁴⁶³ It justifies the importance of media education a) with the promotion of the quality of teaching and learning through the media, b) with social and cultural participation, c) with the personality development of adolescents, d) the development of attitudes, value orientations and aesthetic judgment and e) the necessary protection against negative effects of the media and media use.⁴⁶⁴

In December 2016, the KMK adopted the ‘Education in the Digital World’ strategy for schools and universities.⁴⁶⁵ Even if there have already been reference points in the curricula of the federal states regarding the requirements for learning in the digital world, working with digital media and tools will require changes in the technical requirements.⁴⁶⁶ Across disciplines, the competencies

463 Standing Conference of Ministers of Education and Cultural Affairs (2012), p. 6.

464 Ibid., p. 9.

465 In December 2017 it was supplemented by a section on further training; in the following, reference is always made to the extended version.

466 See Standing Conference of Ministers of Education and Cultural Affairs (2016), p. 12.

required in the digital world are assigned to six areas (and are further differentiated there).⁴⁶⁷ To this end, the KMK has set out a voluntary commitment by the federal states: 'The federal states undertake to ensure that all pupils who start primary school in the 2018/2019 school year, or start secondary school will be able to acquire the competencies formulated in this context by the end of the compulsory schooling.'⁴⁶⁸ With regard to the use of digital technologies in the classroom and Internet access in schools, the KMK has set itself the goal 'that by 2021 every pupil, if it makes sense from a pedagogical point of view, will be able to use a digital learning environment and access the Internet.'⁴⁶⁹

The German Informatics Society has criticised the fact that the subject of IT is not even mentioned in this strategy paper, although the KMK itself regards it as a general educational subject and formulated common requirements for the training of IT teachers in 2015, although the subject of IT has already been established in secondary schools as an elective or compulsory elective subject in almost all federal states and although the general educational value of IT skills has been proven.⁴⁷⁰ This is a sign of reluctance to face the organizational challenges posed by the necessary expansion of the canon of compulsory subjects.⁴⁷¹

An evaluation of the publicly accessible curricula of the federal states for the primary level, lower secondary level I and upper secondary level II is summarised in Table 12. It can be seen here that media education and intercultural competence have already been embedded in the curricula for the primary level as overarching goals in almost all federal states; this is not the case quite as often for secondary schools. There are specialist profiles relating to media and information literacy as well as ICT skills in a good half of the states already for the primary level and almost everywhere for secondary levels I and II. Subject profiles related to intercultural competence are rarer; they were only included in the curricula of more than half of the federal states for lower secondary level.

The KMK made a fundamental decision on the subject of intercultural education as early as 1996.⁴⁷² The development of intercultural education and early education is seen as a continuous process. School is seen as a key place for the acquisition of skills in the language of education; it should actively shape educational and early childhood education partnerships with parents. School should perceive diversity as both normal and as a potential for everyone; in addition it should contribute to the acquisition of intercultural skills.

467 Ibid., pp. 16-19.

468 Ibid., p. 19.

469 Ibid., p. 59.

470 Brinda, Torsten (2017), p. 3.

471 Ibid.

472 Standing Conference of Ministers of Education and Cultural Affairs (2013).

Table 12: Overarching goals and specialist profiles by federal state and educational level

Federal state	Overarching goals						Subject profiles related to:								
	Media education			Intercultural competence			Media and information literacy			ICT skills			Intercultural competence		
	Primary	Sec. I	Sec. II	Primary	Sec. I	Sec. II	Primary	Sec. I	Sec. II	Primary	Sec. I	Sec. II	Primary	Sec. I	Sec. II
Baden-Wuerttemberg (BW)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
Bavaria (BY)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Berlin (BE)¹	X	X	X	X	X	X	-	X	X	X	X	X	-	X	-
Brandenburg (BB)	X	X	X	X	X	X	-	X	X	X	X	X	-	X	-
Bremen (HB)	X	X	X	-	X	X	X	X	X	X	X	X	X	X	-
Hamburg (HH)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
Hesse (HE)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
Mecklenburg-Western Pomerania (MV)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
Lower Saxony (NI)	X	-	X	X	X	X	X	X	X	X	X	X	X	X	X
North Rhine-Westphalia (NW)	X	-	-	X	X	X	X	X	X	X	X	X	X	X	-
Rhineland-Palatinate (RP)	-	-	-	-	X	X	-	X	X	X	X	X	X	X	-
Saarland (SL)	X	-	X	X	X	X	X	X	X	X	X	X	X	X	-
Saxony (SN)	X	-	X	X	X	X	X	X	X	X	X	X	X	X	X
Saxony-Anhalt (ST)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
Schleswig-Holstein (SH)	X	-	-	X	X	X	X	X	X	X	X	X	X	X	-
Thuringia (TH)	X	-	-	-	X	X	-	X	X	X	X	X	X	X	X

1 Since the 2017/2018 school year, Berlin and Brandenburg have had a common framework curriculum for grades 1-10. However, the organization of the secondary III level is up to the respective federal state.

- X** the overarching goals or subject profiles were found in the publicly accessible curricula
- the overarching goals or subject profiles were not found in the publicly accessible curricula

The results presented are based on research in the following publicly accessible sources: **BW** http://www.bildungsplaene-bw.de/_lde/LS/BP2016BVV/ALLG **BY** <http://www.isb.bayern.de/schulartspecificisches/lehrplan/> **BE** <https://www.berlin.de/sen/bildung/unterricht/faecher-rahmenlehrplaene/rahmenlehrplaene/> **BB** <https://bildungsserver.berlin-brandenburg.de/unterricht/rahmenlehrplaene/> **HB** <https://www.lis.bremen.de/schulqualitaet/curriculumentwicklung/bildungsplaene-15219> **HH** <https://www.hamburg.de/bildungsplaene> **HE** <https://kultusministerium.hessen.de/schulsystem/cp-neu-bildungsstandards-kerncurricula-und-lehrplaene/bildungsstandards-core-curricula> **MV** <https://www.bildung-mv.de/schueler/schule-und-unterricht/faecher-und-rahmenplaene/rahmenplaene-an-allgemeinbildenden-schulen/> **NI** <https://cuvo.nibis.de/cuvo.php> **NW** <https://www.schulentwicklung.nrw.de/lehrplaene/> **RP** <https://lehrplaene.bildung-rp.de/> **SL** https://www.saarland.de/mbk/DE/portale/bildungsserver/themen/unterricht-und-bildungsthemen/lehrplaenehandreichungen/lehrplaeneallgemeinbildende/lehrplaeneallgemeinbildende_node.html **SN** <https://www.schule.sachsen.de/lpdb/> **ST** <https://lisa.sachsen-anhalt.de/unterricht/lehrplaenerahmenbedingungen/> **SH** <https://lehrplan.lernnetz.de/index.php> **TH** <https://www.schulportal-thueringen.de/lehrplaene>

► **Indicator:** *Proportion of teachers in primary and secondary schools with training in ICT or the use of ICT in the classroom*

A survey of educational institutions in 2018 showed that almost all teachers (98.6%) at the institutions surveyed were able to use simple applications in their basic functions.⁴⁷³ The teachers were also largely able to handle the basic functions of standard software applications (88.6%). The transfer of knowledge through the use of digital instruments succeeded for 69.7% of those surveyed; access to important data of the educational institution from home or out and about succeeded for 63.9% of the teachers. About half (49.5%) had knowledge of social networks. Almost a fifth (22.1%) were familiar with designing web applications. A fifth (20.1%) also communicated with the learners using online tools and 7.2% of the teachers had basic programming skills. 43.1% of teachers asked for digital forms of communication themselves.⁴⁷⁴ It should be noted at this point that this data was collected before the COVID-19 crisis and that there will definitely be higher usage figures, especially with regard to the use of digital technologies for communication with learners.

A survey carried out in 2017, where teachers were asked to assess themselves, showed that around 64.3% of them thought they had strategies in place to meaningfully combine subject content, digital media and teaching methods in their lessons. 76.6% of those surveyed saw themselves in a position to be able to convey specialist content better using digital media. There are regional differences in the self-assessment: In Rhineland-Palatinate, Bavaria, Lower Saxony and North Rhine-Westphalia, on average teachers rate themselves as more competent

473 Summary of the two possible answers 'Applies' and 'Applies more or less'.

474 iW Consult (2018a), p. 43.

in dealing with media than in Berlin, Saxony, Schleswig-Holstein and Saarland.⁴⁷⁵ The majority of the teachers stated that they had acquired media educational content themselves (68%), while 59% of the teachers learned media skills in further training, 35% during their studies, 13% in certified further training and 10% in vocational training.⁴⁷⁶

Table 13: Digital skills of teachers in Germany 2018

Digital literacy	Completely agree	Mostly agree	Mostly disagree	Completely disagree
Teachers can use simple applications (e.g. web browser, Google search) in their basic functions.	66.8	31.8	1.3	0
Teachers can handle the basic functions of the standard software applications used.	39.5	49.1	10.1	1.3
Teachers are able to impart knowledge through the use of new digital tools.	16.4	53.3	26.4	3.9
Teachers can access important data or information from the school from home or on the go.	33.4	30.5	18.7	17.4
Teachers can post content on social networks (Facebook, Google+, etc.).	12.3	37.2	34.4	16.1
Teachers themselves ask for digital forms of communication.	11.7	31.4	38.2	18.7
Teachers can design web applications (websites, wikis, blogs, etc.).	3.9	18.2	53.3	24.6
Teachers also communicate with pupils or students via video conferences, online conferences or chats.	5.6	14.5	28.8	51.1
Teachers have basic programming skills (e.g. Java, HTML).	2.2	5	41.5	51.2

Source: iW Consult: Digitization in Educational Institutions, 2018, https://www.iwconsult.de/fileadmin/user_upload/projekte/2018/Digital_Atlas/Digitalisierung_in_Bildungseinrichtungen.pdf, p. 43.

475 Deutsche Telekom Foundation (2017), p. 22 ff.

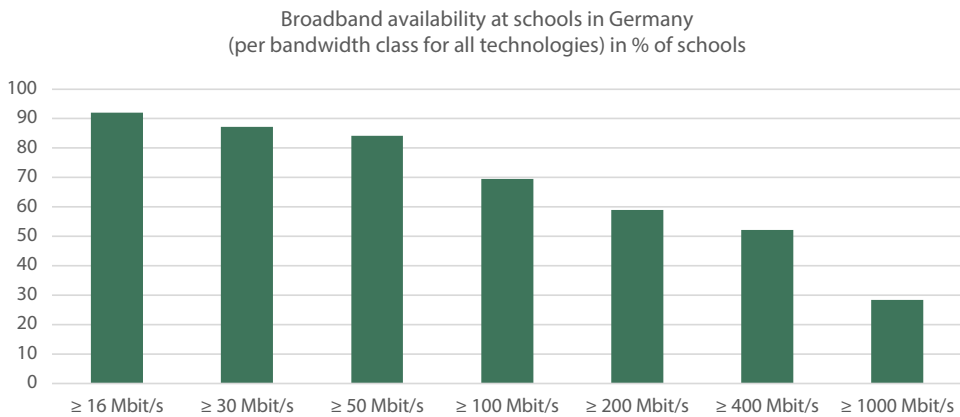
476 Puffer, H. (2019), p. 353.

► **Indicator:** Proportion of schools with Internet access

According to the Education Monitor, 100% of schools in Germany already had a stationary Internet connection in 2018.⁴⁷⁷ With regard to the availability of fast and wireless Internet, a survey of school administrators carried out in 2019 showed that overall only 36% of schools have access to fast Internet and WiFi in all classrooms and subject rooms, while 63% of schools do not. Broken down by type of school, 34% of the primary schools (primary level) indicated the availability of access in all classrooms and subject areas, this was 40% for the secondary school types *Hauptschule*, *Realschule* and *Gesamtschule* (secondary level I) and 45% for secondary school with university preparatory level, or *Gymnasium* (secondary level II).⁴⁷⁸

For a more detailed look, it is worth taking a look at the 2019 publication of the Federal Ministry of Transport and Digital Infrastructure on broadband availability in schools:

Figure 12: Broadband availability at schools in Germany 2019



Source: BMVI: Current broadband availability in Germany (end of 2019), 2019, https://www.bmvi.de/SharedDocs/DE/Publikationen/DG/breitband-verfuegbarkeit-ende-2019.pdf?__blob=publicationFile, p. 6.

In 2018, IT coordinators stated that 14% of the use of digital media in the classroom was severely affected by insufficient bandwidth or speed of the Internet connection, and 29% reported that this had at least a partial impact on digital classes.⁴⁷⁹

In May 2019, the ‘DigitalPact School’ came into effect, which includes funding totalling five billion euros. The funding, which the educational institutions can apply for, is intended to expand the digital infrastructure in the schools, improve the digital skills of teachers and ensure that digital

477 iW Consult (2018b), p. 10.

478 Forsa Politik- und Sozialforschung GmbH (2019).

479 Authoring Group - Educational Report (2020), p. 241.

display devices are available across the board.⁴⁸⁰ With regard to the special situation of the COVID-19 pandemic, programmes for the expansion of digital infrastructures to compensate for the school closings were made available in the amount of 100 million euros.⁴⁸¹ In order to counteract any disadvantage for learners who cannot access a mobile device at home, 500 million euros were also made available as an immediate program.⁴⁸²

► **Indicator:** *Proportion of learners who have access to the Internet in school*

No data are available on the number of learners who have Internet access in their school. It should be noted, however, that only 36% of schools have high-speed Internet access in all classrooms. Learners who attend grammar school have Internet access in school more often than learners who attend lower-level secondary school, comprehensive school or elementary school, cf. indicator 90.

AF.3 What proportion of the population and the workforce is skilled in using ICT?

► **Indicator:** *Proportion of Internet users with special Internet skills, by type of qualification (basic, intermediate and advanced knowledge), aggregated and disaggregated*

According to the European Union's 2020 index for the digital economy and society, 70% of the population in Germany have at least basic digital skills; 39% have more than basic skills. 72% have at least basic software skills. ICT specialists make up 3.9% of all employees. Among the female employees, the share of ICT specialists is 1.4%. The proportion of people who complete an ICT degree is 4.7% of all degrees in Germany.⁴⁸³

► **Indicator:** *Proportion of workers using ICT in the workplace, by type of skill (basic, intermediate, advanced), aggregated and disaggregated*

According to the Federal Statistical Office, in 2018, 77.2% of all employed persons in Germany (between the ages of 16 and 64) used portable digital devices such as computers, laptops,

480 Federal Ministry of Education and Research (2019b).

481 Federal Ministry of Education and Research (2020a).

482 Federal Ministry of Education and Research (2020e).

483 European Commission (2020b), p. 9.

smartphones or tablets at work. One fifth of the workforce (19.5%) used other computer-controlled devices or machines at work.⁴⁸⁴

Portable digital devices are used slightly less by women at work than by men. Computer-controlled machines, on the other hand, are used roughly twice as often by men as by women in a work context. With regard to educational attainment, it can be stated that portable digital devices are most commonly used by workers with a high level of education, while computer-controlled devices/machines are most frequently used by workers with a medium level of education.⁴⁸⁵

Table 14: Use of portable digital devices and computer controlled devices/ machines at work by gender, age and educational level

	Use of portable digital devices at work in %	Use of computer-controlled devices/machines at work in %
Germany	77.2%	19.5%
Men	46.3%	15.0%
16–24 years	39.9%	22.0%
25–44 years	71.8%	32.0%
45–64 years	61.3%	16.9%
Women	38.3%	6.9%
16–24 years	33.0%	8.7%
25–44 years	65.5%	10.3%
45–64 years	52.4%	9.0%
Level of education		
Low	16.6%	8.0%
Medium	45.3%	12.4%
High	67.0%	10.9%

Source: Calculations based on: Federal Statistical Office: Wirtschaftsrechnungen, 2018, https://www.destatis.de/DE/Themen/GesellschaftUmwelt/EinkommenKonsumLebensbedingungen/ITNutzen/Publikationen/Downloads/ITNutzen/private-household-ikt-2150400187004.pdf?__blob=publicationFile ;

Base: see p. 39. 40,449 employed persons aged 16 and over; p. 14 all people.

484 Federal Statistical Office (2018b), p. 39.

485 Ibid.

With regard to digital skills, 56% of employed Internet users rated their skills as appropriate for their professional tasks. The proportion of female employees (62%) is higher than that of male employees (52%). 62% of employees with a low level of education and 50% of employees with a high level of education rated their skills as appropriate to their tasks. A total of 35% said that their skills enabled them to cope with more demanding tasks. 39% of men confirmed this, and 29% of women. 9% each of the male and female employees stated that they required further training measures.⁴⁸⁶

As part of the [Digital Index D21](#), employees and people who were in vocational training were asked to self-assess their digital skills in 2019. 72% of the respondents stated that they had sufficient digital knowledge and skills in their work environment. 26% stated that they lacked sufficient digital skills, of which 62% saw a lack of initiative as the cause (64% of men, 58% of women) and 41% reported a lack of educational opportunities on the part of their employer (37% of men, 46% of women).⁴⁸⁷

► **Indicator:** *Proportion of tertiary students who have taken STEM and ICT courses, broken down by gender, compared to global averages*

According to the [Federal Ministry of Education and Research](#), there were a total of 2,892,044 students in Germany in the 2019/2020 winter semester;⁴⁸⁸ 1,094,544 (37.8%) of them in the [STEM subjects](#) of science, technology, engineering and mathematics. Of the students in the STEM subjects, 69.1% were male and 30.9% were female.⁴⁸⁹

For an international comparison, data is available from the OECD Education Indicators Report from 2017, which shows the proportion of those starting a degree in individual countries, according to individual subject groups and according to the [type of course](#). In Germany, 28% of those starting short tertiary education programmes,⁴⁹⁰ 40% of those starting bachelor's or equivalent courses and 19% of all those starting long master's courses leading to a first degree chose a course in the STEM subjects. In all courses of study in the STEM subjects, the proportion of male first year students is higher than that of female beginners, especially in the short tertiary courses as well as in the bachelor's and equivalent courses.⁴⁹¹

486 Ibid., p. 43.

487 Initiative D21 (2020), p. 57.

488 Federal Ministry of Education and Research (2020b).

489 Federal Statistical Office (2019d).

490 Often developed with the aim of imparting job-related knowledge, skills and competencies to participants. Usually they are practice-oriented, job-specific and prepare the trainees for direct entry into the labor market. They can also open up access to other tertiary education programmes (ISCED 6 or 7). Minimum duration: 2 years. [Source: OECD (2019a), p. 23].

491 OECD (2019a), p. 240.

The proportion of STEM starters in Germany in all three courses is above both the OECD and the EU23 average.⁴⁹² Compared to the OECD and EU23 averages, the proportion of women first year students is higher in short tertiary and master's programmes, while it is slightly lower in bachelor's or equivalent programmes.⁴⁹³

Table 15: Proportion of those starting courses in the STEM subject group by gender and in comparison to the OECD and EU23 average

	Subject group: science, technology, engineering and mathematics – first year students		
	Short tertiary courses	Bachelor's/ equivalent courses	Master's courses
Germany overall	28%	40%	19%
male	67%	74%	53%
female	33%	26%	47%
OECD average	26%	27%	11%
male	80%	70%	58%
female	20%	30%	42%
EU23 average	23%	28%	13%
male	81%	70%	57%
female	19%	30%	43%

Source: OECD; wbv: Education at a Glance 2019. OECD indicators, 2019, <https://www.bmbf.de/files/6001821mw.pdf>, p. 240.

492 A) OECD member states: Austria, Australia, Belgium, Canada, Colombia, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, New Zealand, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United States of America, United Kingdom of Great Britain and Northern Ireland. B) EU23 average: unweighted mean of the data values of the 23 countries that are both members of the European Union and the OECD and for which corresponding data are available or can be estimated (Belgium, Denmark, Germany, Estonia, Finland, France, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Austria, Poland, Portugal, Sweden, Slovakia, Slovenia, Spain, the Czech Republic, Hungary and the United Kingdom of Great Britain and Northern Ireland).

493 OECD (2019a), p. 240.

Information on how many students from other subject groups took part in ICT or STEM courses is not available.

5

For this chapter, the recommendations for various stakeholders are summarised in chapter 8.



M

Multistakeholder
participation

6

CATEGORY M
**MULTI-
STAKEHOLDER
PARTICIPATION**

'Digitalisation should serve people – and not the other way around.'

(Frank-Walter Steinmeier, Federal President, 2020)

'Data centres also have an ecological footprint'

(Svenja Schulze, Federal Minister for the Environment, Nature Conservation and Nuclear Safety, 2020)

What are the general conditions for the participation of stakeholders in Internet-related regulatory processes in Germany and how is the Internet made sustainable?

Given the technical and international interconnections inherent in the Internet, the ability to make use of the opportunities opened up by the Internet in terms of individual freedoms and social participation depends on conditions that cannot be guaranteed by legal safeguards alone.

In addition, what is more important is participatory feedback in the scope of international Internet governance processes, i.e. the 'development and application by governments, the private sector and civil society in their respective roles of common principles, standards, rules, decision-making procedures and programs that shape the development and use of the Internet'⁴⁹⁴.

In this sense, Germany has an open overarching framework for the participation and involvement of stakeholders who are key to the development, use and management of the Internet at various levels.

This positive observation is outlined, among other things, by the hosting of the Internet Governance Forum 2019 in Berlin, the support of the Internet Governance Forum – Germany and continuous involvement in other multi-stakeholder forums. At the same time, the integration of non-state actors in state standard-setting processes does not always run smoothly, since appraisal procedures, for example, are subject to a tight time schedule.

The remaining potential for expansion relates to the number and diversity of those taking part in these processes. In this respect, a stronger participation of women, members of the legislature and members of technical communities appears to be particularly necessary.

494 Cf. No. 34 of the Tunis Agenda for the Information Society, World Summit on the Information Society (2005).



THEME A

Policy, Legal and Regulatory Framework

6

MA.1 Is there a general policy, legal and regulatory framework for Internet development and policy-making that is consistent with international standards?

► **Indicator:** *Presence of an overall framework consistent with relevant international standards*

According to Article 1, (3) of the Basic Law, ‘The following basic rights bind the legislature, the executive and the judiciary as directly applicable law’, the legislature, the judiciary and the executive are bound by the fundamental rights. According to Article 25 of the Basic Law, ‘The general rules of international law (...) are part of federal law. They take precedence over the law and create rights and obligations directly for the residents of the federal territory.’

The BVerfG has made it clear that, in accordance with the Basic Law’s openness to international law, there is an obligation to interpret national law in such a way that it does not conflict with international law:

‘This constitutional meaning of an international treaty aimed at regional human rights protection is an expression of the Basic Law’s openness to international law, which promotes the confirmation of state sovereignty through international treaty law and international cooperation as well as the inclusion of the general rules of international law and is therefore to be interpreted, if possible, that conflict with international law obligations of the Federal Republic of Germany does not arise.’⁴⁹⁵

Accordingly, the Basic Law is based on a moderate dualistic model. The general rules of international law (Art. 38 (1) lit. c) IGJ statute) take precedence over the simple laws according to Art. 25 sentence 2 GG. General rules of international law are therefore hierarchically below the constitution, but above the formal federal laws. Art. 25 sentence 2 GG is a pure conflict of laws rule. The same applies to the corresponding procedural standard in Art. 100 (2) GG.

Germany has evolved into an important player in Internet governance and is working at the European and international levels towards human rights-based and technology-sensitive policies.⁴⁹⁶ In view of the importance of a secure and stable Internet for almost all functional

⁴⁹⁵ Federal Constitutional Court (2004), p. 317 f.

⁴⁹⁶ Kettemann, M. C. (2020), p. 7.

areas of the modern state, safeguarding the integrity and functionality of the Internet and its core resources are in the 'interest of the global community'.⁴⁹⁷

Germany is a member state of the International Telecommunications Union (ITU) and one of its main supporters and advocates of multi-stakeholder governance.⁴⁹⁸ The Basic Law does not contain any specific regulation on multi-stakeholder governance. However, fundamental rights (and human rights) apply equally online and offline. A right of access can be derived in various ways for Germany, including as a prerequisite for enjoying other rights and as an independent right, encompassing the basic right to ensure a decent subsistence level (Art. 1 (1) in conjunction with Art. 20 (1) GG).⁴⁹⁹

► **Indicator:** *Existence of legal and regulatory frameworks that enable electronic commerce, digital signatures, cybersecurity, data protection and consumer protections*

In the area of electronic commerce, the E-Commerce Directive in particular plays a key role in Germany as a member state of the European Union.⁵⁰⁰ In general, it should be noted here that in many areas of digitalisation policy, the scope of German legislation is shaped by European law. In the field of digital signatures, too, the legal situation in Germany is based on the eIDAS regulation on electronic identification and trust services⁵⁰¹ according to European law. In the area of cybersecurity, there is a close interlinking of EU, federal and state authorities in Germany, which is coordinated by the Federal Office for Information Security (BSI), among others.⁵⁰² In the area of data protection, the General Data Protection Regulation⁵⁰³ has been in effect since 25 May 2018. Consumer protection is also very important in Germany. This area of regulation is also heavily influenced by the requirements of EU law.⁵⁰⁴

Electronic commerce is regulated by different sets of legislation in Germany. These include the Civil Code (BGB), the Introductory Act to the Civil Code (EGBGB), the Commercial Code (HGB), the Copyright Act (UrhG), trade regulations of the federal states (GewO), the Act against Unfair Competition (UWG) and for criminal acts also the Criminal Code (StGB). The provisions of the BGB, in particular, regulate distance selling in accordance with Sections 312b ff BGB and e-commerce. In addition, Section 491ff. BGB are relevant for consumer credit legislation. In this context, the provisions on the verification of standard business terms in the BGB Section 305ff. are also relevant. Companies in the electronic commerce sector have to comply with

497 Ibid.

498 ITU (2018a).

499 Kettmann, M. C. (2020), p. 9.

500 European Union (2000).

501 Federal Office for Information Security (2016).

502 Federal Office for Information Security (2020a).

503 Federal Ministry for Economic Affairs and Energy (2018).

504 Federal Ministry for Economic Affairs and Energy (2020c).

the provisions of the Unfair Competition Act (UWG). The technical aspects of e-commerce are regulated by the Telemedia Act (TMG). The TMG implements parts of the E-Commerce Directive (Directive 200/31/EC)⁵⁰⁵. In addition, the [eIDAS regulation on electronic identification and trust services](#), the Trust Services Act and the Price Indication Ordinance (PAngV) as well as the Ordinance on Service Providers' Duty to Inform (DL-InfoV) are relevant. With the Digital Services Act, the EU Commission is planning a legislative package to comprehensively update the e-commerce directive in 2020 ff.⁵⁰⁶ The proposed law essentially pursues four goals: first, to standardise the digital domestic market; second, to improve control for market-dominating platform companies; third, to promote competition for digital space; and fourth, to promote and control interoperability in order to counteract negative network effects.

For a long time, [digital signatures](#) conformed to the provisions under the Digital Signature Act (SigG). The Trust Services Act is now relevant. The Signature Ordinance (SigVO) was repealed with the eIDAS Ordinance. The Federal Office for Information Security [monitors implementation and technical standards](#).⁵⁰⁷ The electronic seal was introduced with the eIDAS Ordinance, which enables legal persons to provide proof of origin for documents, but unlike the electronic signature, it is not necessarily linked to the declaration of intent.⁵⁰⁸

In the area of cybersecurity, Germany's 2016 cyber security strategy⁵⁰⁹ laid the foundation for minimum infrastructure requirements with the passing of the [IT Security Act](#)⁵¹⁰. Four fields of action were defined in the cyber security strategy. Firstly, it was about enabling secure and self-determined actions in a digitalised environment; secondly, formulating a joint mandate for the state and business; thirdly building an efficient and sustainable cyber security architecture and fourthly, to push forward Germany's proactive position in the European and international cyber security policy.⁵¹¹ In addition, the Telecommunications and Telemedia Act was amended. With the directive on measures to ensure a high common level of security for network and information systems (NIS) ([Directive \(EU\) 2016/1148](#))⁵¹² the EU has created a uniform framework that the member states have to implement. The [NIS directive](#) (Act Implementing the European Directive on Ensuring a High Level of Network and Information Security) provides, among other things, for building cybersecurity capacity in all member states, promoting cooperation, and establishing reporting requirements.⁵¹³

505 European Parliament, Council of Europe (2000).

506 European Commission (2020b).

507 Federal Office for Information Security (2001); Federal Office for Information Security (2016).

508 Federal Office for Information Security (2016).

509 Federal Ministry of the Interior (2016).

510 German Bundestag (2015).

511 Federal Ministry of the Interior (2016).

512 European Union (2016).

513 Federal Ministry of the Interior, Building and Community (2017).

In the area of data protection, the GDPR and German data protection law, the right to informational self-determination and Art. 7 and 8 of the EU Charter of Fundamental Rights -monitored by the data protection authorities of the federal states - are particularly relevant. These rights are put into practice through the robust data protection jurisprudence of the Court of Justice of the European Union and the Federal Constitutional Court.

Consumer protection is mainly enshrined in the German Civil Code and in the robust consumer jurisprudence of German courts. In the area of digital consumer protection, the BSI is responsible for improving the level of protection.⁵¹⁴ The BSI follows a three-stage approach. First of all, the risk awareness of consumers should be improved in order to ensure, in the next step, that their ability to judge is enhanced and, ultimately, to provide consumers with options for action that they can also use effectively.⁵¹⁵



THEME B

National Internet Governance

MB.2 Does the government actively involve other stakeholders in the development of national Internet guidelines and laws?

▶ **Indicator:** Provision for multi-stakeholder consultation and participation in national institutions and policy-making processes dealing with the development and use of the Internet

▶ **Indicator:** Number of actively participating non-governmental stakeholders, by stakeholder group, broken down by gender

The Federal Government actively involves other interest groups in developing national Internet guidelines and Internet-related legislative projects.⁵¹⁶ Extensive consultation procedures took place, among other things, as part of the process to develop the Federal Government's AI strategy in 2018 and the white paper on Digital Platforms in 2017. Furthermore, the federal government holds the digital summit annually, where operators from business, science and society develop and present projects, events and initiatives that are intended to advance digitalisation in business

514 Federal Office for Information Security (2020b).

515 Federal Office for Information Security (2020b).

516 Email from BMWi – Unit VIA5 (Internet Governance and International Digital Policy) and the Federal Foreign Office, 14.07.2020.

and society. Not least, by organising the IGF 2019 in Berlin, the Federal Government clearly committed itself to the principle of multi-stakeholder participation in Internet governance, even if, given the wide variety of consultation procedures, a breakdown by stakeholder groups and gender is not possible.⁵¹⁷

The more recent examples of consultations with other stakeholders – which conceptually is not a multi-stakeholder process in which all actors meet on an equal footing – include the implementation of a Germany-wide online consultation process on the Federal Government's Artificial Intelligence strategy (2018) with documentation of the [results](#) on the Internet.⁵¹⁸ Within digital policy instruments, such as the AI strategy, attention is also paid to exchanging ideas with various stakeholders. The Federal Government is committed to 'organising a European and transatlantic exchange on the use of AI in the world of work, in which scientists and practitioners will take part.'⁵¹⁹ The Federal Government also supports the participation of experts, particularly small and medium-sized enterprises (SMEs) and start-ups, in international standardisation processes.⁵²⁰

Besides the Cabinet Committee on Digitalisation, which was formed in 2018 and is chaired by the Federal Chancellor, Dorothee Bär was appointed as Federal Government Commissioner for Digitalisation and the 'Digital Council', an external advisory body to the Federal Government was constituted. The 'IT Council' also ensures uniform control of IT policy at the federal level. The Federal Government also set up the Data Ethics Commission in 2018; its purpose is to answer ethical and legal questions about AI and algorithms and to develop ethical guidelines. The 'Young Digital Economy Advisory Board' was set up so that the federal ministries, but especially the BMWi, would be constantly supplied with all-encompassing new information on the digital transformation. The 'IT Planning Council' was set up to ensure that the federal and state governments work together with regard to information technology. All federal activities for digitalising the administration are pooled in the 'Federal IT Cooperation' (FITKO). The federal and state governments are also advised by the 'Council for Information Infrastructures', an academic advisory body, with regard to the further development of academic information structures. With the 'Cyber Innovation Hub', which is intended to serve as the interface between start-ups and the Bundeswehr, and the 'Health Innovation Hub', which is responsible for all operators in the health care system, digital innovations are being further developed in these areas.⁵²¹

The 'Future of Mobility' platform (NPM), which has been set up on a national level and provides a plenary session for questions relating to the mobility sector, and the 'Smart Cities Dialogue

517 Email from BMWi – Unit VIA5 (Internet Governance and International Digital Policy) and the Federal Foreign Office, 14.07.2020.

518 The results of these processes are shown on the website www.ki-strategie-deutschland.de.

519 Federal Government (2018a), Field of Action 5: The world of work and the labor market.

520 Ibid., Field of activity 10: Setting standards.

521 Digital made in de (2020).

Platform', which focuses on digitalisation issues relating to urban development policy, provide an opportunity for further development through digitalisation by their existence. 'Mittelstand-Digital' has a direct connection to small and medium-sized companies and informs them about the opportunities and challenges of digitalisation.⁵²²

M.B.3 Is there a national Internet governance forum and/or another multi-stakeholder forum that is open to all stakeholders and in which various stakeholder groups actively participate?

► **Indicator:** Existence of a national IGF and/or other multi-stakeholder forum dealing with Internet governance

In 2020, the annual Internet Governance Forum Germany (IGF-D) took place for the 12th time. As a national IGF, the forum, which is open to all interested parties, deals with questions of network policy and Internet regulation. Panel proposals can be submitted a few months in advance. The Steering Committee decides on this basis on the thematic focus. The IGF-D sees itself as a discussion forum without specific normative outputs. The (on average) ten panels cover many current topics of network politics and enable the participants to participate. The Steering Committee, which is not transparently elected and staffed, is made up of members of the Bundestag, the government, civil society, science, business and the technical community as well as a representative of young people. Together with the IGF-D sponsoring association, the Steering Committee has set itself the goal of attracting more attention to questions relating to Internet regulation in German politics and the general public.⁵²³

The Youth IGF Germany was launched in 2012 specifically for the younger generation of those interested in network policy,⁵²⁴ which usually takes place before the IGF-D⁵²⁵ and bundles the demands of the youth.⁵²⁶ In 2019 the German Youth IGF was organised as part of the global Youth IGF Summit. In 2020 the youth IGF took place virtually. The subjects are determined by the participants themselves. Between the meetings of the Youth IGF-D there are regular events for capacity building and knowledge transfer.⁵²⁷ There is also a robust debate on the policy-making of Internet regulation in German civil society and foundations. Corresponding introductory publications were issued by the Friedrich Ebert Foundation, among others.⁵²⁸

522 Ibid.

523 Internet Governance Forum-Germany (2020).

524 Email from Elisabeth Schauermaann, coordinator of the Youth IGF Germany, German Informatics Society e. V. (GI).

525 Follow-up report IGF (2019) and messages on boys IGF-D 2019 IGF-D (2019).

526 The youth IGF Germany website is on Twitter, Facebook and Instagram: https://twitter.com/jugend_igf_d?s=20 ; <https://de-de.facebook.com/jugend.igf.d/> ; <https://www.instagram.com/jugend.igf.d>.

527 Events of the youth IGF-D on digitalisation and sustainability (<https://yigf.gi.de/event/digitisation-and-sustainability>) and on data protection, privacy and human rights (<https://yigf.gi.de/event/2020-a-crisis-for-data-protection-and-digital-rights>).

528 In particular, the publication 'Who governs the Internet?', which is also available in English (FES (2019)).

► **Indicator:** Participation data for national IGFs or other forums, aggregated and disaggregated by gender and stakeholder group, with special consideration of the participation of selected groups (e.g. ministries of education, SMEs, NGOs dealing with children, trade unions), including arrangements for remote participation

The IGF-D takes place annually locally in Berlin and is streamed live. Remote participation has been possible since 2020.

Participation data - The data on the participants over the last two years show that participation has increased significantly. It is influenced in roughly equal part by people from academic communities, civil society and business; in addition, the legislature, the executive and, to a lesser extent, technical communities are also represented. At 60%, male persons form the majority.⁵²⁹

Table 16: Participation in the IGF-D in 2018, 2019 and 2020 by stakeholder group and gender

	2018	2019	2020
Number of participants	250	391	439*
of which stakeholder groups in %			
Legislature	5.3	10.8	2.8
Executive	7.4	11.4	6.2
Economy	28.9	22.9	11.9
Civil society	26.3	23.6	21.0
Technical communities	2.1	3.7	-
Academic communities	30.0	27.6	18.2
Youth IGF	-	-	4.5
Other/not specified	-	-	21.2/14.2
Participants by gender in %			
Female	34	39	42.2
Male	64	60	44.5
Diverse/No indication	2	1	13.9

Source: Emails from Julia Pohle, member of the steering committee, IGF-Germany, and Tim Richter, chairman of the steering committee, IGF-Germany.

* Registrations; Number of non-online participants not known

529 Emails from Julia Pohle, member of the steering committee, IGF-Germany, and Tim Richter, chairman of the steering committee, IGF-Germany.



THEME C

International and Regional Internet Governance

M.C.2 Do the government and other stakeholders from the country actively participate in major international forums dealing with ICT and the Internet?

► **Indicator:** Number of participants from different stakeholder groups participating in global and regional IGFs, per million population, aggregated and disaggregated by stakeholder group and gender

German participants are active in both the European Internet Governance Forum (EuroDIG) and the global Internet Governance Forum (IGF).

Table 17: German participants at the global IGF per million population by stakeholder group

	2017	2018	2019
Civil society	0.55	0.40	6.61
Government	0.29	0.19	2.93
International organizations	0.16	0.18	0.11
Private sector	0.27	0.20	4.22
Technical community	0.17	0.08	1.23
Press	0.02	0.02	n/a
Participants by gender			
Female	0.48	0.43	6.53
Male	0.98	0.60	9.33
Diverse			0.34

Source: Email from the IGF Secretariat (Anja Gengo).

The particularly high number of participants from Germany in 2019 can be attributed to the fact that the IGF took place in Berlin that year.

Table 18: German participants in the European regional Internet Governance Forum (European Dialogue on Internet Governance - EuroDIG) per million population by stakeholder groups

	2019	2020
Stakeholder group		
Civil society	0.08	0.30
Academia	0.06	0.30
Government	0.02	0.08
International organizations	0.02	0.08
Technical community	0.05	0.11
Private sector	0.10	0.19
Others	0.06	0.18
Press	0.01	0.05
Participants by gender		
Female	0.17	0.51
Male	0.23	0.71
Diverse	0.01	0.08

Source: Registrations for EuroDIG 2019 and 2020 from Germany, EuroDIG Secretariat, email from 8 July 2020.

► **Indicator:** *Participation of non-governmental stakeholders in official ITU delegations, aggregated and broken down by interest group and gender*

Germany's official delegations to the ITU are not only attended by people from ministries, but also by companies coordinated by the BMWi. However, the BMWi does not have an overview disaggregated by gender or stakeholder affiliation.⁵³⁰

⁵³⁰ Email from BMWi – Unit VIA5 (Internet Governance and International Digital Policy) and the Federal Foreign Office, 14.07.2020.

M.C.3 Are the government and other stakeholders actively involved in the Internet Corporation for Assigned Names and Numbers (ICANN)?

► **Indicator:** Membership and active participation in the ICANN Advisory Committee on Government Affairs (GAC)

► **Indicator:** Membership in and active participation in ICANN constituencies, working groups, and other forums

The Federal Government participates in the ICANN Advisory Committee on Government Affairs (GAC). Before the meeting, it coordinates with the ministries and with the domain economy. The Federal Government is represented in the GAC's Public Safety Working Group.⁵³¹ The government also participates in various policy development processes within ICANN. People nominated by the government as delegates participate in current political debates through correspondence, for example with the IANA Stewardship Transition and in connection with the sale of the Public Interest Registry (PIR), which administers the .org domains. In doing so, an agreement is regularly sought between the Federal Foreign Office and the Federal Ministry for Economic Affairs and Energy. German stakeholders also participate in various positions in the Regional Internet Registry (RIR) system (RIPE and RIPE NCC) as well as in standardisation processes relating to the IETF (Internet Engineering Task Force).⁵³²

The 69th ICANN meeting, which should originally have been held in Hamburg, took place virtually from 17 to 23 October 2020.

Participants from Germany also participate in the four ICANN committees (Advisory Committees) that ICANN supports. In addition to the government committee (GAC), these are the committees for operators of root servers, the committee for organizations dealing with Internet security and the committee for Internet users (at-large community).⁵³³ EURALO, the European user organizations, lists the following German members:⁵³⁴ German Association for Data Protection e. V. (Bonn), Digitalcourage e. V. (Bielefeld), dotHIV (Berlin), Forum Computer Scientists for Peace and Social Responsibility e. V. (Bremen), Förderverein Informationstechnik und Gesellschaft e. V. (Jena), Humanistische Union e. V. (Berlin), Medienstadt Leipzig e. V. (Leipzig), Netzwerk Neue Medien (Berlin), LOAD e. V. (Berlin).

531 Feedback from the BMWi Department VIA5 (Internet Governance and International Digital Policy) and the Federal Foreign Office.

532 Email from Peter Koch, Internet Society, German Chapter e. V. (ISOC.DE).

533 ICANN (2020)

534 ICANN AT-LARGE (2020).

In addition to the ICANN representative office in Germany, the German chapter of the Internet Society (ISOC) also plays an important role in the translation of ICANN's work. Since 1995 the German Internet Interest Group (DIGI e. V.), which was also founded in 1992, has formed the German section of ISOC.⁵³⁵

6

For this chapter, the recommendations for various stakeholders are summarised in chapter 8.

535 Birkenbiehl, K. (1998).



X

Cross-cutting

7

CATEGORY X
**CROSS-CUTTING
INDICATORS**

'Digital technology should overcome oppression and alleviate poverty, enable debates and not poison them, disseminate education and enlightenment, protect the environment and conserve resources if possible.'

(Frank-Walter Steinmeier, Federal President, 2020)

'Whether in social networks, on YouTube or in the digital games' world, nowadays, children and young people are on the Internet as a matter of course - it is all the more frightening how easily they can be contacted and baited by right-wing extremists.'

(Franziska Giffey, Federal Minister for Family Affairs, Senior Citizens, Women and Youth, 2020)

Which cross-policy issues arise in Germany's Internet policy? How can discrimination be prevented and the protection of both people and computer systems be ensured?

Considering the interests of disadvantaged groups in the design of national digital strategies is supported in terms of the underlying values in which they are framed as set out in Art. 3 (1) GG, the general principle of equality ('All people are equal before the law.'). which, according to the Federal Constitutional Court, 'is one of the fundamental constitutional principles of the liberal-democratic constitution' as a positivism of the fundamental idea of justice⁵³⁶ and is specified for certain groups in special equality clauses and warranty obligations in Art. 3 (2) and 3 GG.

Specific duties to protect, for example in relation to the protection of women and girls from gender-specific harassment and digital violence on the Internet can arise from relevant fundamental rights and are expressed in different basic legal approaches such as those of the Criminal Code (StGB) and the General Equal Treatment Act (AGG).

There are only minor differences between the sexes with regard to the use of the Internet. Overall, there is no evidence of a digital gap between the sexes with regard to the use of the Internet. Nevertheless, information and communication technologies have a high potential for discrimination. Thus, ensuring that automatic decision-making systems do not discriminate has been identified in digital policies as a commitment to protection; a clear way to achieve this has not yet become apparent. Hoping for transparency and accountability will not be enough. The most politically promising approaches seem to be risk class-based approaches for automatic decision-making systems.

536 BVerfG, decision of 02/20/1957 - BVerfGE 6, 257 (Rn. 14).

Internet security remains a major issue in Germany too: with a view to Internet security against attacks on public infrastructures, the national cyber strategy and the establishment of Computer Emergency Response Teams (CERT), which are organised within the administrative CERT association, are important. With regard to the IT security of companies, there is an increase in the number of companies affected by cybercrimes, at least in the context of larger samples.

The overall picture also includes the openly acted-out conflict of goals between more security through hardening of the IT infrastructure and supposed security through more powers for the security authorities. Specifically, this comes to light when encryption is required but a decryption authority (such as ZITIS) is set up or when the BSI draws attention to security gaps, but at the same time a law is drafted according to which providers can be obliged to secretly install malware.



THEME A Gender

XA.1 Are the interests and needs of women and girls explicitly taken into account and effectively monitored in national strategies and guidelines for the development of the Internet?

► **Indicator:** *The national strategies explicitly take into account a) the needs of women in relation to the Internet and b) the potential of the Internet to support women's self-determination and gender equality*

The Federal Government takes into account the interests and needs of women and girls in national strategies for development, for example in the digital agenda for 2014–2017, the implementation strategy for digitalisation (2020) and especially in connection with the equality strategy (2020).

Chapter IV of the [Digital Agenda 2014–2017](#) on the topic of shaping digital living environments in society explicitly focuses on strengthening the opportunities for families and equality:

There is also great potential in terms of gender equality policy in the ability to shape the digital world – for example, by strengthening the compatibility of family and work as partners, through new forms of political participation or through new opportunities for women and men to open

*up fields of action that are atypical of gender and thus break up role stereotypes. We want to take on this challenge and advance the issue of 'Equality on the Net' as a separate issue.*⁵³⁷

In the digitalisation implementation strategy ('Shaping digitalisation' (4th Ed., 06/20))⁵³⁸ of the Federal Government also explicitly refers to the protection of women and girls from digital violence in the field of digital competence in the focus on a competent society. In addition, in this strategy, the Federal Government names equality as a 'consistent guiding principle that should be promoted in all policy, standard-setting and administrative measures of the federal ministries in their areas, including digitalisation.'⁵³⁹ At the international level, the Federal Ministry for Economic Cooperation and Development (BMZ) has also been campaigning for digital equality and the inclusion of women and girls in developing and emerging countries with the #eSkills4Girls initiative since the German G20 presidency in 2017.⁵⁴⁰

The Federal Government's equality strategy 'Strong for the future' (2020)⁵⁴¹ aims to shape the effects of digitalisation and the use of algorithmic systems in a non-discriminatory manner and thus contribute to reducing gender inequalities. This is discussed in Chapter 2.3, Digital Living and Working World.⁵⁴² To this end, women and men should be equally involved in the development of ICT and the underrepresentation of women in the STEM subject, which is part of digitalisation, should be eliminated.⁵⁴³ In addition, equality policy standards must also be set in the digital world of life and work. This includes, among other things, the prevention of inadmissible discrimination in the use of algorithm-based decisions, as well as reviews of occupational health and safety in the digital world of work, as well as the review of the protection against discrimination that is effective there.⁵⁴⁴

Chapter 2.8 calls for compatibility and equal participation in management positions in the federal public service. Equal participation in management functions in the public sector is to be stipulated for the scope of the Federal Equal Opportunities Act by December 31, 2025 at the latest, and part-time work in management positions in the public service is to be made more accessible than before.⁵⁴⁵

In 2019, the Federal Minister for Family Affairs, Senior Citizens, Women and Youth appointed an expert commission for the Third Equal Opportunities Report ('Opportunities for women and

537 Federal Government (2014), p. 24.

538 Federal Government (2020), p. 25 ff.

539 Ibid.

540 Federal Government (2020a).

541 Federal Ministry of Health (2020).

542 Ibid., p. 17.

543 Ibid., p. 18.

544 Ibid.

545 Ibid., p. 22.

men in the digital economy).⁵⁴⁶ This report should primarily deal with the question of how digitalisation can promote equality for women. The report with comments from the Federal Government should be available in spring 2021.⁵⁴⁷

The European Union also obliges all its member states through its legislation and other measures to eliminate discrimination based on gender. A prominent example of the implementation of EU directives in this area in Germany is the General Equal Treatment Act (AGG), which prohibits discrimination based on characteristic of gender. The Council of Europe also decides on conventions, programmes and recommendations to safeguard human rights and gender equality, most recently the Convention on Preventing and Combating Violence against Women and Domestic Violence (Istanbul Convention), which came into force in Germany on 1 February, 2018⁵⁴⁸ and that could also be used with a view to digital violence.

The Federal Equal Opportunities Act also has the task of promoting equality between women and men in federal agencies, especially in management positions.⁵⁴⁹

The Federal Government is pursuing a number of different priority measures as part of its implementation strategy 'digital-made-in.de'. This includes, projects to promote media skills under the title 'Growing up well with the media', which are networked and coordinated by an initiative office⁵⁵⁰ and especially equipped by the Federal Association of Women's Advice Centres and Women's Emergency Calls (bff) to protect women and girls from digital violence, to perform information work and to qualify the support system. In an international context, the #eSkills4Girls initiative promotes digital skills of women and girls in developing countries, among other things by supporting a programming academy for women in Rwanda and participating in the EQUALS initiative (The Global Partnership for Gender Equality in the Digital Age), in which the Federal Government is involved through the Federal Ministry for Economic Cooperation and Development, which together with UNESCO leads the working group on digital skills. In this context, initiatives that promote the digital skills of women and girls in Africa have been funded by the 'EQUALS Digital Skills Fund' since 2018.⁵⁵¹

546 Federal Ministry for Family, Seniors, Women and Youth (2019).

547 Ibid.

548 Federal Government (2018e).

549 In the highest federal authorities, 36% of management positions are held by women: Federal Statistical Office (2019f); see also Biermann, Kai/Geisler, Astrid (12.11.2018).

550 Federal Government (2020), p. 26.

551 Federal Government (2020), p. 28.

► **Indicator:** *Number of women and men in leadership positions in government dealing with ICT/Internet*

In the Gender Equality Index 2019⁵⁵² equality between women and men was determined in the highest federal authorities, but not specifically for the ICT/Internet area.

The number of women and men in leadership positions in government dealing with ICT/Internet indicates significant bias. Within the German government, the following agencies deal with ICT and the Internet: the Federal Ministry of Justice and Consumer Protection (BMJV), the Federal Ministry of the Interior, Building and Community (BMI), the Federal Ministry of Transport and Digital Infrastructure (BMVI) and the Federal Ministry for Economy and Energy (BMWV) and the Foreign Office (AA). AA, BMI, BMVI and BMWV are all run by men, the BMJV is run by a female minister. The BMJV, which is headed by a female minister, proves to be quite gender-sensitive in its internal organizational structure in the management functions,⁵⁵³ whereas the ministries of the interior,⁵⁵⁴ for business and energy⁵⁵⁵ and traffic⁵⁵⁶ are also dominated by men at the other management levels in addition to the top level. The following table provides an overview of the managers involved in ICT and the Internet.

552 Federal Statistical Office (2019f).

553 Federal Ministry of Justice and Consumer Protection (2020).

554 Federal Ministry of the Interior, Building and Community (2020a).

555 Federal Ministry for Economic Affairs and Energy (2020).

556 Federal Ministry of Transport and Digital Infrastructure (2020).

Table 19: Top management staff concerned with ICT and the Internet in the Federal Government by gender

Men	Women
Björn Böhning , State Secretary for Digitalisation and Work Environment department, among others (BMAS) ⁵⁵⁷	Dorothee Bär , Minister of State and Federal Government Commissioner for Digitalisation ⁵⁶²
Professor Dr. Christian Kastrop , State Secretary in particular for the Digital Society Department (BMJV) ⁵⁵⁸	Dr. Regine Grienberger , Ambassador for Cyber Foreign Policy and Cyber Security at the Federal Foreign Office (AA)
Dr. Tobias Miethaner , Head of the Digital Society Department (BMVI) ⁵⁵⁹	Rita Hagl-Kehl , Parliamentary State Secretary in particular for the Digital Society Department (BMJV) ⁵⁶³
Dr. Ulrich Nussbaum , State Secretary for Digital and Innovation Policy (BMWV) ⁵⁶⁰	Anette Kramme , Parliamentary State Secretary for the Digitization and Working Environment Department, among others (BMAS) ⁵⁶⁴
Dr. Markus Richter , Federal Government Commissioner for Information Technology ⁵⁶¹	Dr. Tamara Zieschang , State Secretary for Digital Society and others (BMVI) ⁵⁶⁵

► **Indicator:** *Extent of disaggregation of available data on ICT access and use by gender*

If you look at the distribution by gender, you will find figures relating to access to the Internet against the background of absolute gender⁵⁶⁶ (male/female; the diverse category is not recorded/shown), as well as figures on the use of the Internet against the same background.⁵⁶⁷ A further breakdown (e.g. according to ethnicity) is not possible, however.

Both quantitative and qualitative access to the Internet, broken down by gender, are available regularly and constantly updated (in both categories, the genders sometimes differ only marginally⁵⁶⁸). In addition to various statistics, bundled at statista⁵⁶⁹ and figures from the BVDW

557 Federal Ministry of Labour and Social Affairs (2020).

558 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (2020a).

559 Federal Ministry of Transport and Digital Infrastructure (2020).

560 Federal Ministry for Economic Affairs and Energy (2020b).

561 Federal Ministry of the Interior, Building and Community (2020a).

562 Federal Government (2020c).

563 Federal Ministry of Justice and Consumer Protection (2020).

564 Ibid.

565 Federal Ministry of Transport and Digital Infrastructure (2020).

566 ITU (2019); Statistics for this here: Federal Statistical Office (2020b).

567 Use of the Internet: broken down by gender (no major deviations) here: Federal Statistical Office (2020a); broken down by age (large variance) here: Federal Statistical Office (2020d).

568 Ibid.

569 Statista (2020).

(Federal Association of the Digital Economy),⁵⁷⁰ in the special evaluation of the D21 Digital Index 2018/2019, it is noticeable that there are still differences between the genders, measured in terms of self-assessment, in access to digitalisation, user behaviour, competence and openness.⁵⁷¹

Table 20: Digital Gender Gap

Indicators	General	Men	Women
Access to digitalisation: <ul style="list-style-type: none"> • Internet use (business/private, general/mobile) • Equipment 	72%	76%	68%
Usage behaviour in the digital world: <ul style="list-style-type: none"> • Digital applications that people use regularly • Average Internet usage time 	39%	42%	36%
Digital competence: <ul style="list-style-type: none"> • Knowledge of digital topics (e.g. terms such as cloud, e-health, etc.) • Technical or digital competence 	49%	55%	43%
Openness to digitalisation: <ul style="list-style-type: none"> • Attitudes towards the use of the Internet and digital devices as well as changes in the digital world 	52%	57%	47%

Source: Initiative D21: Digital Gender Gap, January 2020, https://initiatived21.de/app/uploads/2020/01/d21_digitalgendergap.pdf, p. 7.

► **Indicator:** National mechanisms in place to monitor the inclusion of women in Internet access and use strategies

The existence of national mechanisms to monitor the inclusion of women in Internet access and Internet use strategies is also difficult to demonstrate. Only the above-mentioned monitoring of the Act on the equal participation of women and men in management positions in the private and public sectors⁵⁷² through the indicator report of the Federal Statistical Office, which is to be submitted every two years⁵⁷³ should be mentioned again here.

570 BVDW (2018).

571 Initiative D21 (2020).

572 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (2015).

573 Federal Statistical Office (2018c).

✘A.2 Is there a digital gender gap in Internet access and use, and if so, is this gender gap growing, stabilising, or narrowing?

► **Indicator:** *Share of people using the Internet, broken down by gender, compared with the gender differences in income and educational level*

According to the [Federal Statistical Office](#), 90% of Germans used the Internet every day or almost every day in 2019. When this is broken down by gender, there are only minor differences: 88% of women and 91% of men use the Internet regularly.⁵⁷⁴ When it comes to [using the Internet for private purposes](#), both genders are practically the same in all categories (participation in social networks/searching for information/online banking).⁵⁷⁵

Analyses where Internet usage within the sexes is also broken down according to income and education are not available. Since the differences between the sexes are slight, there is also no need to clarify whether they are due to gender or other related characteristics.

► **Indicator:** *Proportion of adult women and men with mobile broadband subscriptions, broken down by gender, compared to the gender-specific differences in income and educational level*

According to the [D21-Digital-Index](#), the proportion of mobile Internet users among the female respondents was 71% compared to 78% among male mobile users.⁵⁷⁶ In 2018 around 66% of women used the Internet on their smartphone or cell phone. 70% of men used their smartphones to access the Internet.⁵⁷⁷

► **Indicator:** *Survey data on Internet awareness and patterns of Internet use, disaggregated by gender*

[Surveys by the Federal Statistical Office](#) from 2019 showed that 56% of women and 54% of men used social media for private communication,⁵⁷⁸ the [time spent on social media](#) per working day in minutes (2019) differs quite a bit: 106 minutes for women, 81 minutes for men.⁵⁷⁹

574 Federal Statistical Office (2020).

575 Federal Statistical Office (2020f).

576 Initiative D21 (2020), p. 14.

577 Statista (2019).

578 Federal Statistical Office (2020f).

579 BVDW (2019).

When it comes to using the Internet to order products/services (online shopping), there is no difference in this regard when broken down by gender (2019) (women: 66.4% and men: 66.3%).⁵⁸⁰ In 2015 there was a difference of 7.3% in favour of men.⁵⁸¹ Similar to the use of the Internet in general, an alignment can also be clearly seen here.

Attitudes towards the Internet, on the other hand, show differences. For example, men indicate more often that they search for things on the Internet and they are successful in their search.

Table 21: Survey on online behaviour in Germany in a gender comparison

	Women	Men
I search on the Internet	67.2%	76.4%
I always find what I'm looking for on the Internet	38.6%	52.6%
I often get information on the Internet while I'm out and about, for example, via a mobile phone, smartphone or notebook	38.4%	49.3%
I am generally not willing to pay for information on the Internet	37.8%	41.2%
I'd rather send a text message or WhatsApp message than make a call	36.5%	35.0%
I hardly notice advertising on the Internet	27.9%	31.7%
When I buy new products, I also use reviews from Internet users as a guide	26.3%	32.6%
I find out about current events in social networks	24.5%	26.5%
I often find out more specific things about companies on the Internet	12.0%	21.3%

Source: Statista German population on attitudes towards the Internet in a gender comparison in 2020, July 2020, https://de-1.statista-1.com/100b48b9x0ddb_emedien3.sub.uni-hamburg.de/statistik/daten/studie/826775/umfrage/umfrage-in-deutschland-zum-online-verhalten-im-geschlechtervergleich/.

This may well be related to different skills. A survey on the knowledge and understanding of digital technical terms by gender (proportion of respondents who can explain the terms below or know their meaning),⁵⁸² shows that more men than women are familiar with the relevant terms.

580 Statista (2020a).

581 Ibid.

582 Initiative D21 (2020), p. 31.

Table 22: Knowledge and understanding of digital technical terms by gender

Term	Women	Men
Fake news	65%	72%
Artificial intelligence	54%	69%
Shitstorm	52%	64%
Cloud	48%	65%
Electronic patient record	49%	57%
Algorithm	33%	54%
Digital health services	38%	47%
Two-factor authentication	22%	36%
Bots (Social Bots, Chatbots)	15%	30%
Industry 4.0	13%	31%
Internet of things	10%	24%
Blockchain	8%	20%

Source: Initiative D21: How digital is Germany?, 2020, https://initiated21.de/app/uploads/2020/02/d21_index2019_2020.pdf, p. 30.

The majority of the people surveyed are familiar with terms from the field of social media (fake news, shitstorm) and media-related topics (e.g. artificial intelligence). The gender-specific differences are smaller here, however, solely in favour of men. When it comes to more technical terms, the gap widens. The lesser-known and more technical terms (Industry 4.0, Blockchain) are known to significantly more men than women within the group of people surveyed.

► **Indicator:** Perception of the barriers to access to the Internet and its use as well as the value of Internet access and Internet use, broken down by gender. (Also see indicators 73 and 82)

According to the [Digital Index 2019/2020 report](#), older generations and people with low levels of education are still significantly less likely to use the Internet than others. In addition, the more urban the environment is or the more people live in the household, the more likely it is that they use the Internet.⁵⁸³

583 Ibid., p. 15.

Even among the non-users, at 67%, there are significantly more women (of the older age groups, with a rather lower level of education).⁵⁸⁴ Considering the use of social media, it becomes clear that YouTube, Twitter and the professional networks LinkedIn and XING are used more by men than women. TikTok, on the other hand, tends to reach more women, as does Pinterest.⁵⁸⁵

XA.5 Do the law, law enforcement and judicial processes protect women and girls from gender-based harassment and violence online?

► **Indicator:** *Existence of a relevant legal framework and judicial process*

Belonging to or identifying with a gender is not a connecting factor in Germany for special protection by law. Neither online nor offline.

Article 3 of the Basic Law reads:

- (1) *All people are equal before the law.*
- (2) *Men and women have equal rights. The state promotes the actual implementation of equality between women and men and works towards eliminating existing disadvantages.*
- (3) *Nobody may be disadvantaged or favoured because of their gender, their origin, their race, their language, their homeland and origin, their beliefs, their religious or political views. Nobody may be disadvantaged because of their disability.'*

In principle, therefore, neither discrimination nor preferential treatment of women and girls is provided for by constitutional channels. Girls and women are not specifically protected from online harassment or violence by the law, although they are more likely to be victims of these crimes.⁵⁸⁶ In this context, personal freedom, sexual self-determination, honour and physical integrity are protected by the Criminal Code of the Criminal Code.⁵⁸⁷

Section 238 of the Criminal Code, which criminalises so-called 'creeping up on people', was reformed in 2016 in order to be able to capture the phenomenon of so-called stalking.⁵⁸⁸ The extent to which these changes in legislation will actually lead to an improvement in the protection of stalking victims is contentious.⁵⁸⁹

584 Ibid., p. 19.

585 Ibid., p. 24.

586 ZET Online (24.11.2019).

587 Federal Ministry of Justice and Consumer Protection (2017).

588 Federal Ministry of Justice and Consumer Protection (2016).

589 Gazeas, N. (2016).

Under civil law, there has been protection for victims of violence since 2001 through the law on civil protection against acts of violence and stalking (Violence Protection Act – GewSchG).⁵⁹⁰ Since 2017, the violation of orders according to Section 1 of this act has been a criminal offence according to §4, GewSchG, whereby the law has been tightened again. This is also intended to combat domestic violence in particular.

In addition, the Act to Improve Legal Enforcement in Social Networks (Network Enforcement Act – NetzDG) has been protecting those affected indirectly since 2017.⁵⁹¹ Service providers are obliged to delete illegal content, e.g. content that under Section 1(3) NetzDG violates Sections 86, 86a, 89a, 91, 100a, 111, 126, 129 to 129b, 130, 131, 140, 166, 184b in conjunction with Sections 184d, 185 to 187, 201a, 241 or Section 269 StGB and are not justified. In §4, NetzDG, substantial fines are stipulated for violations.

With the introduction of the NetzDG, the transfer of criminal offenses to the digital sphere works increasingly better. For example, with the inclusion of Section 241 StGB - 'Threat', a basis was created in the NetzDG with which women can better defend themselves against announcements and threats of sexual or sexualised violence on social networks. The 'stalking' criminal offence of Section 238 StGB is not taken up in the NetzDG. In practice, there are still large gaps in the protection of women on the Internet.

What happens below the threshold of criminal law is also problematic, in particular the erosion of basic democratic principles that cannot be grasped by criminal law. The fact that courts have the responsibility to enforce laws does not suffice. However, a high number of unreported cases can be assumed in the area of sexual and sexualised violence, also and especially when it happens in the digital sphere. In Germany there is a large number of support services (e.g. help hotlines), but so far they have not managed to improve the situation for women in the long term.⁵⁹² There is a particular deficit in the provision of places in women's shelters. The Federal Minister for Family Affairs is currently calling for the right to a place in a women's shelter to be enshrined in law.⁵⁹³

► **Indicator:** *Incidence of gender-based harassment and violence online experienced by women and girls*

There is very limited research and data on digital violence. In response to a minor inquiry, the Bundestag confirmed at the end of 2018 that the judiciary does not collect any statistical information on digital violence against women and girls. The police crime statistics of the Federal Criminal Police Office record whether the Internet played a major role in the implementation

590 Federal Ministry for Family, Seniors, Women and Youth, Federal Ministry of Justice and Consumer Protection (2019).

591 Federal Ministry of Justice and Consumer Protection, Federal Office of Justice (2017b).

592 Federal Ministry for Family, Seniors, Women and Youth (2020).

593 FAZ (25.11.2019).

of criminal offences, but it could not be said whether these were offences classified as digital violence against women and girls.⁵⁹⁴

There is no international definition of digital violence on the Internet. The European Institute for Gender Equality (EIGE), however, has compiled a list of some of the forms of violence that people have experienced on the Internet.⁵⁹⁵ This includes what is known as ‘cyber stalking’, which includes sending offensive or threatening emails, text messages (SMS) or instant messages, posting offensive comments and repeatedly disseminating private photos or videos of the person concerned on the Internet or via mobile phone. According to the institute, harassment is another form of digital violence. This refers to unwanted, clearly sexual messages, inappropriate advances, threats of physical and/or sexual violence and hate speech (denigrating, insulting or threatening language based on the identity of the person concerned). Non-consensual pornography, also known as cyber exploitation or ‘revenge pornography’, is one of the digital forms of violence. This means the distribution of sexually graphic photographs or videos without the consent of the person concerned.

Individual results indicate that women and girls experience these forms of violence more often than men, as evidenced by a survey carried out in 2017 among advisory workers in women’s advice centres and women’s emergency hotlines. In addition to the forms of digital violence listed by the European Institute for Gender Equality, the advisory employees stated that their clients also experienced violence in the form of contact through fake profiles, which is very often followed by harassment and (sexual) violence, identity theft, love fraud (love scamming), unauthorised creation of pictures or videos in public spaces (e.g. in the changing room) or active deletion of important documents. Exercising control in the context of stalking in the form of installing spy apps or reading messages when passwords are known were also mentioned, as well as secret filming via cameras installed in private rooms or secret eavesdropping on conversations.⁵⁹⁶

The advisory employees stated that young girls struggle with digital violence, especially in the area of bullying, in the lack of awareness regarding the protection of their own privacy and the dangers of sexting (communication of sexual content) and grooming (targeted contact between adults and minors with intent to abuse).⁵⁹⁷

Most of the counselling centres surveyed recorded an increase in counselling requests on the subject of digital violence over the past three years (since 2014). Violence via digital media is reported to appear more and more frequently as an accompanying topic, but it is not the main reason to seek advice.⁵⁹⁸

594 German Bundestag (2018), p. 2.

595 For the following, see European Institute for Gender Equality (2017), p. 4.

596 Women against violence e. V. (2017), p. 4.

597 Ibid., p. 9.

598 Ibid., p. 7 f.

The [European Institute for Gender Equality](#) has pointed out that violence on the Internet should not be seen as a completely separate phenomenon, but rather in a continuum with Internet-independent violence.⁵⁹⁹ In this context, it should be noted that according to the [statistics of the Federal Criminal Police Office](#) for 2018, 81.3% of the victims of intimate partner violence are women.⁶⁰⁰

► **Indicator:** *Evidence of government, law enforcement and judicial action to protect women from gender-based harassment and online violence*

In Germany, the local police and public prosecutor's offices are initially responsible for digital violence in criminal offenses (e.g. insults, defamation, etc.): in North Rhine-Westphalia, for example, there has been a [headquarters and contact point for cybercrime \(ZAC NRW\)](#) and in Hesse there has been a general prosecutor's office since the beginning 2020. With regard to counselling offers that are funded by the government, there are a large number of initiatives by numerous victim support organizations at different levels (municipalities/states/federal) that also offer support for dealing with digital violence (e.g. the psychosocial care and counselling centres). An overview can be found in the [online database of the counselling centres](#) for victims of criminal offenses.

The 'Active against digital violence' project, supported by the Federal Government as part of the 'implementation strategy for digitalisation'⁶⁰¹ and funded by the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth (BMFSFJ) of the Federal Association of Women's Advice Centres and Women's Emergency Calls (bff),⁶⁰² which aims to prevent and combat forms of gender-based violence in digital spaces, not only provides information about the topic, but also offers direct assistance.

► **Indicator:** *Presence of online services to protect women from gender-specific online harassment or to support those affected*

Organizations like [HateAid](#) that provide legal advice to those affected by hate speech and support them in court⁶⁰³ as well as the [No Hate Speech network](#)⁶⁰⁴ (as a German offshoot of the European no-hate speech movement) offer their services as civil society actors online.

599 European Institute for Gender Equality (2017), p. 4.

600 Federal Criminal Police Office (2018).

601 Digital made in de (2020).

602 Women against violence e. V. (2020).

603 HateAid (2020); BMJV funded.

604 No hate speech (2020).



THEME B Children

XB.3 How do children perceive the Internet and how do they use it?

► **Indicator:** *Perceptions of the Internet among children derived from surveys, including usage barriers, usage value and usage anxiety, aggregated and disaggregated*

Since 1999 there has been a regular study carried out on the importance of the media in everyday life for children between the ages of 6 and 13. The children are interviewed personally; at the same time, the main parent/caretaker will fill out a written questionnaire. The latest results come from a nationwide survey of 1,231 German-speaking children in 2018.⁶⁰⁵

In an open question, the 6- to 13-year-olds were asked to describe what the Internet was to them. The answers were subsequently categorised and summarised. It was found that from a child's perspective, the information aspect is particularly relevant for Internet use, but other categories were also common in the children's responses (information 51%, application 39%, communication 35%, general 29%, technology 14%).⁶⁰⁶

Of the children who use the Internet, one in ten answered yes to the question as to whether they have ever come across something online that is not suitable for children. 5% have come into contact with unpleasant content and 4% have encountered something frightening. Boys were more likely than girls to come into contact with unsuitable content. With age, not only does Internet use increase, but also the likelihood of being confronted with unsuitable Internet content.⁶⁰⁷

► **Indicator:** *Data on the use of the Internet by children, aggregated and disaggregated, compared to other age groups (e.g. data on location, frequency and type of use)*

According to the results of a survey from 2018 of 1,231 German-speaking children between the ages of 6 and 13, 65% of the children surveyed use their family's Internet connection. The older the children are, the more likely their parents are to allow them to use it (6-7 years: 32%,

605 Media Education Research Association Southwest (2018).

606 Ibid., p. 31.

607 Ibid., p. 61.

8-9 years: 55%, 10-11 years: 79%, 12-13 years: 90%).⁶⁰⁸ Of the children who are allowed to use the Internet at home, 40% use it daily or almost every day, a further 41% once or several times a week, and 19% of those surveyed use it less often (regardless of the medium through which they have access to the Internet).⁶⁰⁹

With increasing age, children use media more and more autonomously, i.e. without parents, siblings or friends. This applies in particular to surfing the Internet (I tend to do it alone: 6-7 years: 8%, 12-13 years: 72%) and for online research for school (6-7 years: 2%, 12-13 years: 63%).⁶¹⁰

For children and adolescents between the ages of 9 and 17, current results are available from a representative survey of 1,044 children and adolescents in Germany, which was carried out in 2019 for the international comparative study EU Kids Online.⁶¹¹ According to this, the 9- to 11-year-olds use online services on average 1.4 hours per day, the 12- to 14-year-olds use 2.4 hours a day on average and the 15- to 17-year-olds even 3.4 hours.⁶¹²

The self-assessment of the children and adolescents surveyed at EU Kids Online with regard to their online skills is mainly positive. On the other hand, in the year before the survey, 9% of the children and adolescents experienced something online that was bad for them or even disturbed them (e.g., something that made them feel uncomfortable, that made them afraid or something they thought they shouldn't have seen).⁶¹³

XB.4 Is there a legal and policy framework to promote and protect children's interests online, and is it implemented effectively?

► **Indicator:** *Existence of a political framework and legal safeguards compatible with the UN Convention on the Rights of the Child (CRC) and evidence that these are implemented by the government and other relevant authorities*

Germany has signed and ratified the UN Convention on the Rights of the Child and the three Optional Protocols.⁶¹⁴ The Federal Ministry for Families, Seniors, Women and Youth (BMFSFJ) is responsible for overseeing implementation and control.⁶¹⁵

608 Ibid., p. 28.

609 Ibid., p. 32.

610 Ibid., p. 16.

611 For the following, see Hasebrink, U.; Lampert, C.; Thiel, K. (2019); for the international comparative results see eukidsonline.net.

612 In the ARD/ZDF online study 2018, online usage of 5.7 hours was determined for the age group of 14- to 19-year-olds and online usage of 3.3 hours per day for the total population aged 14 and over; see Frees, B.; Koch, W. (2018).

613 Ibid., p. 404.

614 German Institute for Human Rights (2020).

615 Federal Ministry for Family, Seniors, Women and Youth (2014).

The legal basis for youth media protection is formed by the Youth Protection Act (JSchG), the Youth Media Protection State Treaty (JMStV), the Audiovisual Media Services Directive (AVMD-RL), the State Treaty on Gambling, the State Broadcasting Agreement (RStV) and the Telemedia Act (TMG). The new Youth Protection Act, which was passed by the Federal Cabinet in autumn 2020, attempts to adapt the Youth Protection Act to digital phenomena. This includes protecting children and adolescents from interaction risks such as bullying, sexual grooming or cost traps, increased orientation for parents, skilled workers and adolescents through uniform age ratings, and the enforcement of regulations against foreign companies that exploit children and adolescents particularly intensively.

The Commission for Youth Media Protection (KJM) is the central supervisory body for the protection of minors in private nationwide television and on the Internet. It is their job to ensure compliance with youth protection regulations and to encourage companies to take responsibility within the framework of regimented self-regulation. In the event of violations, the KJM decides on the application of supervisory measures (complaints, prohibitions, fines). The KJM acts as an organ of the relevant state media authority, which implements the decisions of the commission. In the Internet sector, the KJM is supported by the Jugendschutz.net competence centre jointly established by the federal and state governments.



THEME C Sustainable Development

XC.1 Do national and sectoral development policies and strategies for sustainable development effectively incorporate ICT, broadband and the Internet?

► **Indicator:** *The existence of a recent, comprehensive policy for the development of ICT, broadband and the Internet, including reflection on the likely future developments in these areas*

As early as 2001, the Federal Government founded a Council for Sustainable Development, which consists of 15 public figures. Its task is to develop the contributions for implementing the German sustainability strategy, to name specific fields of action and projects and to make sustainability a major public issue.⁶¹⁶ It recently explicitly addressed the topic of communication

⁶¹⁶ Sustainable Development Council (2020a).

technology and recognised a start-up that wants to establish sustainable mobile communications in Germany – with strict data protection, a climate-positive CO₂ balance, certified according to the rules of the economy for the common good – as a Sustainability 2019 transformation project.⁶¹⁷

The German Advisory Council on Global Change (WBGU) has presented a comprehensive report on the topic of sustainability in development in the areas of ICT, broadband and the Internet.⁶¹⁸ In it, the authors make clear how digitalisation permeates and shapes further social development, and they call for digitalisation to be used in the service of sustainability.⁶¹⁹ In particular, the recommendation expressed in the German Advisory Council on Global Change's (WBGU) report to 'put digitalisation at the service of sustainability' and to move from 'present administration' to 'future design' can develop the power to guide policy. The report shows how digitalisation policy can make a contribution to securing the foundations of human life and, with appropriate democratic control, can secure individual freedom and strengthen the cohesion of societies. The WBGU report also points out that the development of digital technologies must be embedded in a 'sustainable development strategy' that has a longer time horizon than 2030, the target year of the UN Sustainable Development Goals (SDGs). The Institute for Ecological Economic Research also works on the sustainability of digitalisation and the digitalisation of sustainability.⁶²⁰

In June 2013, the Federal Network Agency published a strategy paper for the use of frequency ranges for mobile communications, Internet access and competing uses, in which it presented its conceptual considerations on the short, medium and long-term availability of spectrum resources for broadband expansion in Germany.⁶²¹ When assigning frequencies for mobile communications, the network operating companies are required to actually use the assigned frequencies. However, the Federal Network Agency found that the network operating companies Telefónica, Telekom and Vodafone 'could not prove that the coverage requirements were fully met on time' at the end of 2019.⁶²²

In their coalition agreement of 12 March 2018, the governing parties laid down guidelines for the development of the infrastructure for communication and information. According to this, all citizens should have a legal right to access high-speed Internet by 2025.⁶²³

A central point of reference for the Federal Government's sustainability policy, also considering development cooperation, are the Sustainable Development Goals adopted by the heads of state

617 Sustainable Development Council (2020b).

618 German Advisory Council on Global Change (2019).

619 Ibid., p. 413.

620 Institut für ökologische Wirtschaftsforschung GmbH Berlin (2020).

621 Federal Network Agency (2013).

622 Federal Network Agency (2020d).

623 The Federal Government (2018c), p. 38.

and government of the UN member states in 2015; they were last updated in 2018.⁶²⁴ With a view to public communication, Goal 16 is particularly important here: 'Promote peaceful and inclusive societies for sustainable development, enable all people to have access to justice, and build efficient, accountable and inclusive institutions at all levels.' The guarantee of public access to information is mentioned as Target 16.10. A national reporting platform on the indicators of the global sustainability goals was established by the Federal Statistical Office and activated in 2019. It refers to the Freedom of Information Act, which came into force in 2005, for this indicator. It obliges the federal authorities to grant access to official information.

XC.7 What proportion of businesses, including small and medium-sized enterprises, use the Internet and e-commerce?

► **Indicator:** *Share of SMEs using the Internet by type of access*

According to the [Federal Statistical Office](#), around half (51%) of all companies with Internet access and at least ten employees had high-speed Internet (at least 30 Mbit/s) in 2018. This means an increase of nine percentage points when compared with the previous year (2017: 42%).⁶²⁵

According to a [business survey](#) carried out in 2018, 83.5% of companies surveyed used at least one kind of digital technology. In companies with 50–249 employees, the proportion was 88%, in companies with at least 250 employees it was even 90.2%.⁶²⁶

According to this survey, digital technologies were most frequently used for digital data exchange with customers or with delivery and service companies (64.7%), followed by digital distribution channels such as online shops (50.9%) and digital services such as cloud services (37.8%). By contrast, applications such as the Internet of Things, big data analysis and the networking and control of machines and systems via the Internet were not as widespread, as the following table shows.⁶²⁷

624 Federal Government (2018f).

625 Federal Statistical Office (2018d).

626 KOFA (2019), p. 9.

627 Ibid. p. 8.

Table 23: Use of digital technologies in companies, 2018

Type of use	Yes, for at least 2 years	Yes, for a maximum of 2 years	No	Not able to evaluate
Digital data exchange with suppliers, service providers, customers	53%	11.7%	33.4%	1.8%
Digital distribution channels	42%	8.9%	47.2%	2.0%
Digital services (e.g. cloud services)	24.8%	13.0%	58.8%	3.3%
Networking and control of machines and systems via the Internet	7.2%	2.8%	84.7%	5.3%
Internet of things	5.1%	1.2%	87.0%	6.7%
Big data analytics	4.9%	3.5%	82.8%	8.8%
Additive manufacturing processes	4.7%	2.2%	88.6%	4.5%
Virtual/Augmented Reality	3.6%	3.0%	89.1%	4.4%

Source: kofa: Digital Education in Companies, March 2019, https://www.kofa.de/fileadmin/Dateiliste/Publikationen/Studien/Digitale_Bildung_in_Unternehmen_3_2019.pdf, p. 8.

In another business survey, also carried out in 2018, 81.6% of the companies stated that at least half of their workforce used stationary devices such as computers. Half of the companies (50.7%) stated that more than half of the employees used mobile devices. In 26.3% of the companies, the majority of employees used digital services and in 72.6% of the companies they used digital infrastructures.⁶²⁸

This survey also addressed the industry-specific degree of digitalisation using a ranking that took into account the use of digital devices, the status of in-house digitalisation and the impact of digitalisation on companies, thus forming an index (DIGITAL economic index).⁶²⁹ In this ranking, the ICT sector achieved the highest index value (74 points out of 100), followed by the knowledge-intensive services sector (63), financial and insurance services (61), retail (54), chemical and pharmaceutical industry (50), mechanical engineering (48) and energy and water supply (47). The lowest score in the index was achieved by healthcare (37).⁶³⁰

► **Indicator:** *How SMEs perceive the value of Internet use*

Companies see the benefits of digitalisation in various areas. In 2018, 69% of the companies indicated in the aforementioned survey that digitalisation resulted in enhanced customer

628 Federal Ministry for Economic Affairs and Energy (2018b), p. 4.

629 Ibid.

630 Ibid., p. 9.

communications through the use of digital channels. The following aspects were also identified as success factors with regard to digitalisation: building up knowledge relevant to success in the company (53%), improving the quality of products or offers (52%), increasing the ability to innovate through digital processes and applications (47%), opening up new markets or target groups (46%), reducing costs through the digitalisation of internal processes, workflows and resources (44%), gaining competitive advantages through digital offers for customers (37%), developing new digital services that complement the existing range of services (34%) and developing completely new products/services (24%) or completely new business models (22%).⁶³¹ A quarter of the companies surveyed for the DIGITAL business index indicated that they achieve very high sales (at least 60% of total sales) with digital offers. The influence of digitalisation on a company's success was rated as extremely strong or very strong by 31.4% of those surveyed.⁶³²



THEME D

Trust and Security

XD.1 Is there a national cybersecurity strategy based on international human rights standards, including a national computer emergency response team (CERT) or equivalent?

► **Indicator:** *There is a multi-stakeholder cybersecurity strategy that is consistent with international law and norms*

There has been a national cyber strategy in Germany since 2016.⁶³³ There is also a national cyber security council, which has been supported by an advisory board since July 2017.⁶³⁴ The guiding principle of the strategy is that 'Germany's ability to act and its sovereignty (...) has to be guaranteed even in the age of digitalisation.'⁶³⁵

631 Ibid., p. 14.

632 Ibid., p. 5.

633 Federal Ministry of the Interior, Building and Community (2016).

634 Ibid.

635 Ibid.

In the national cyber defence centre (Cyber-AZ), the federal authorities responsible for cyber security issues exchange information on cyber incidents and share their assessments and analysis.⁶³⁶ Authorities dealing with cybersecurity exist at EU, federal and state levels.

With the IT Security Act and the Act on the Federal Office for Information Security (BSI), important steps were taken in 2015 towards improving security and advancing digitalisation policy in Germany. The law creates binding minimum requirements and reporting obligations for companies operating critical infrastructure. The role of BSI as an organization was also strengthened.⁶³⁷

► **Indicator:** *Establishment of a national CERT or equivalent system and evidence of its effectiveness*

At the federal level, there is a national Computer Emergency Response Team, known as the CERT-Bund for short. Within its area of responsibility for federal institutions, it is responsible for creating and publishing recommendations for preventive actions to avoid damage to hardware and software products and to provide support for measures that limit damage in IT security incidents. It works closely with the IT Situation Centre and the IT Crisis Response Centre and supports them in terms of personnel.⁶³⁸

To fulfil these tasks, the CERT-Bund offers a 24-hour on-call service that analyses incoming reports about unusual incidents and derives recommendations from them, operates a warning and information service and alerts the federal administration in the event of acute threats.⁶³⁹ In addition, the CERT-Bund provides free information for private individuals on the Bürger-CERT platform, which can be used to access and subscribe to all information about current attacks by malware and security gaps in computer applications.⁶⁴⁰

The area of public administration in Germany is organised within the Verwaltungs-CERT-Verbund (VCV)⁶⁴¹ (Administrative CERT Association) at federal and state level. The first CERTs are now emerging in the municipal sector. Together with other German security and computer emergency teams – especially from the banking industry – the CERT-Bund forms the CERT association umbrella association, which is to improve operational security.⁶⁴²

636 Ibid., p. 28.

637 Federal Ministry of the Interior, Building and Community (2017).

638 CERT-Bund (2020).

639 Ibid.

640 Federal Office for Information Security (2020c).

641 CERT association (2020).

642 Ibid.

✘ D.4 Have there been significant cybersecurity violations in the country in the past three years?

► **Indicator:** *Frequency and type of reported violations and the number of individuals and companies affected*

The Federal Criminal Police Office (BKA) publishes an annual report on cybercrime in Germany; most recently in September 2020. It reported that there were 100,514 cybercrimes in the narrower sense in Germany in 2019,⁶⁴³ which means an increase of 15.4% compared to 2018. With a clearance rate of 32.3%, there were 22,574 suspects. In addition to the data collected, a high number of unreported cases is assumed - this is because many cases are not reported as the offences do not go beyond the experimental stage or the victims do not recognise them or do not report them out of shame or fears of loss of reputation or due to the lack of financial damage.⁶⁴⁴

The BKA has calculated the possible amount of damage for cybercrimes in the narrower sense, although this – as the BKA itself states – will by no means correspond to the actual damage. This also explains the large discrepancy between the calculations of the BKA and the calculations of the private sector.⁶⁴⁵

The recent findings of a random survey of 1,070 German companies, on behalf of BITKOM, showed that 75% of the companies surveyed had been affected by a cybercrime in the past two years and a further 13% had suspected this. This corresponds to an increase of 9% when compared with 2017. 70% of the companies indicated that they had suffered financial damage from the cyberattacks. As regard to the damage incurred, BITKOM has calculated, on the basis of a self-assessments by companies, that cybercrime has caused annual losses of EUR 102.9 billion.⁶⁴⁶

A survey published in 2020 by the Criminological Research Institute of Lower Saxony (KFN) on cyberattacks against companies in Germany estimated a lower number for affected companies. Only 41.1% of the randomly surveyed companies indicated that they had been a victim of cyberattacks in the last 12 months; 67% of the companies stated that they had ever been a victim of cybercrime at all.⁶⁴⁷ A large proportion of the companies were hit by malware attacks in the twelve months prior to the survey: 12.5% were hit by (at least) one ransomware attack,

643 Federal Criminal Police Office (2020), p. 47. In the narrower sense, the internationally recognized term 'cybercrimes' is assigned the following criminal offenses in Germany under the Criminal Code: Section 263a (computer fraud), Section 202a-202d (spying on and intercepting data including preparatory acts and data stealing), Section 269 (falsification of evidence-relevant data), Section 270 (deception in legal relations), Section 303a (data modification), and Section 303b (computer sabotage).

644 Ibid., p. 47.

645 Ibid., p. 48.

646 Berg, A.; Niemeier, M. (2019), p. 2 and p. 6.

647 Criminological Research Institute Lower Saxony e. V. (2019).

11.3% by a spyware attack, 21.3% by one other malware attack and 22% were affected by a phishing attack.⁶⁴⁸

Table 24: Companies affected by cyber attacks

Type of attack	Affected companies in %
Ransomware	12.5
Spyware	11.3
Other malware	21.3
Manual hacking	2.8
(D)DoS	6.4
Defacing	3.1
CEO fraud	8.1
Phishing	22.0
All types of attack in total	41.1

Source: Criminological Research Institute of Lower Saxony e. V.: Cyber attacks against companies in Germany, 2019, https://kfn.de/wp-content/uploads/Forschungsberichte/FB_152.pdf, p. 107.

The prevalence rate in relation to sector affiliation is also striking. Of the companies in the agriculture and forestry sector, 23.6% stated that they have already been victims of cybercrime; by contrast, 48.4% of the surveyed companies in the business services sector indicated the same.⁶⁴⁹

Between October 2017 and October 2018 there were also 21 reported cases of cyberattacks on critical infrastructures (KRITIS), companies and facilities in the sectors of water, energy, nutrition, information and telecommunications technology, finance and insurance, transport and traffic, health, media and culture, government and administration. In view of the importance of the functioning of these facilities and companies to society in general, protecting it is a special priority. Nevertheless, experts and those affected agree that there will be an increase in such attacks, also as a result of an increasingly digitalized world and society.⁶⁵⁰

► **Indicator:** *Perception of Internet security among users, companies and other interest groups*

As discussed under indicator 124, many government agencies have recognised the importance of cyber security and established Computer Emergency Response Teams (CERTs). In this area, or in medium to large sized companies, there is a certain sensitivity to cybersecurity challenges.⁶⁵¹

648 Ibid., p. 107.

649 Ibid., p. 103.

650 Federal Criminal Police Office (2020), p. 54.

651 Federal Office for Information Security (2020b).

Nevertheless, a random survey of company representatives showed that the larger the company, the lower the assessment of the general risk awareness of the workforce is. In contrast, company representatives assumed that their company's management was better able to assess the IT risks than the workforce.⁶⁵²

While in a survey by BITKOM a large majority of companies were convinced that even more cyberattacks will be perpetrated on their company in the future,⁶⁵³ in the PWC survey, 31.5% of respondents considered the risk of an untargeted cyberattack in the next year to be rather high or very high and only 7% considered the risk of a targeted cyberattack to be rather high or very high.⁶⁵⁴

With regard to the perception of Internet security by individual Internet users, a meaningful benchmark is the failure to perform various Internet activities due to security concerns. 35% of Internet users neglected the maintenance of professional or social networks due to security concerns and 25% avoided public WiFi networks, while only 15% of users did not order goods or services online due to security concerns. Only 36% of Internet users state that they have not neglected any activities on the Internet for security reasons.⁶⁵⁵

59% of Internet users protect themselves from losing their data by backing up data on an external storage medium or in a cloud. 34% of users do not back up their data, while 7% do not even know whether they are saving their data.⁶⁵⁶

► **Indicator:** *Data on phishing, spam and bots in domains at national level*

The latest studies published by BITKOM and the Criminological Research Institute of Lower Saxony (KFN) came to similar conclusions as regards harmful cyberattacks in companies through phishing. According to BITKOM, the proportion of companies affected by phishing attacks rose from 15% in 2017 to 23% in 2019; according to the KFN study, 22% of the companies surveyed were affected by phishing.⁶⁵⁷

The study by the Criminological Research Institute of Lower Saxony (KFN) also looked at other types of cybercrimes such as the use of ransomware, spyware and DDoS.⁶⁵⁸ According to this study, 12.5% of companies were affected by ransomware attacks and 11.3% by spyware. In

652 Criminological Research Institute Lower Saxony e. V. (2020).

653 Berg, A.; Niemeier, M. (2019), p. 10.

654 Criminological Research Institute Lower Saxony e. V. (2020), p. 91.

655 Federal Statistical Office (2019f), p. 42 f.

656 Ibid., p. 44.

657 Berg, A.; Niemeier, M. (2019), p. 4; Criminological Research Institute Lower Saxony e. V. (2020), p. 166.

658 Criminological Research Institute Lower Saxony e. V. (2020), p. 107.

addition, 2.8% of companies were affected by manual hacking, 8.1% by CEO fraud⁶⁵⁹ and 3.1% by defacing.⁶⁶⁰

With regard to the proportion of companies affected by malware, both studies had similar findings at 21.3% (KFN) and 23% (BITKOM). The findings on (D)DoS attacks toward companies were very different⁶⁶¹. While KFN reported that just 6.4% of the companies had been affected, 18% of the companies in the BITKOM survey indicated that they had been affected by (D)DoS attacks.⁶⁶²

With regard to damage caused by spam, there are data from the two email providers, GMX.de and Web.de; these providers have stated that half of Germans have an email account with them. Between them they identified, on average, 150 million emails per day that were classified as spam in 2018.⁶⁶³



THEME E

Legal and Ethical Aspects of the Internet

XE.3 How do individuals perceive the benefits, risks and effects of the Internet within the country?

► **Indicator:** *Perceptions of the benefits, risks and effects of the Internet, derived from household or opinion polls, broken down by gender*

In the DIVSI study (German Institute for Trust and Security on the Internet) ‘Digitalisation is forging ahead - people full of hope and optimism’ from 2017, 75% of the respondents (84% of the men surveyed, 68% of the women surveyed, both sexes particularly higher earners with a higher educational qualifications) perceived advantages for Germany as a whole through digitalisation, 63% also saw mainly advantages for themselves personally (68% of the men surveyed, 58% of the women surveyed, both sexes again especially higher earners with higher educational qualifications).⁶⁶⁴

659 Fraud in which companies are manipulated using false identities to transfer money.

660 Attack on a website that changes the visual perception of the website.

661 Unavailability of an Internet service that should be available.

662 Berg, A.; Niemeier, M. (2019), p. 4; Criminological Research Institute Lower Saxony e. V. (2020), p. 107.

663 Schwarz, L. (2019).

664 German Institute for Trust and Security on the Internet (2017), p. 9 and p. 11.

Only 15% of the respondents believed that Germany would likely have disadvantages as a result of digitalisation (9% of the men surveyed, 20% of the women surveyed, both sexes mainly lower earners and lower educational qualifications). 20% saw mainly disadvantages for themselves personally, broken down into 15% of the men surveyed and 24% of the women surveyed, also with a higher share in the groups with lower income and less education.⁶⁶⁵

Table 25: Perception of risk on the Internet

Risk	Perception in %
Computer or other devices being infected with malware, e.g. viruses	62
Spying on my access data, e.g. for online banking or Internet shops	61
Fraud in online shopping, an online auction or online banking	61
Unwanted disclosure or resale of my data (e.g. profile photos, address data, etc.)	59
Theft of intimate documents (e.g. photos or videos) that I have stored on a device or online/in the cloud	55
That my profile is hacked and others post/comment on my behalf	52
Unauthorised use of my photos that I have posted on social media offerings	48
Publicly posting embarrassing and/or intimate posts or chats	46
Nuisance of unsolicited emails (spam emails)	45

Source: DIVSI: DIVSI U25 study: Euphoria was yesterday, November 2018, <https://www.divsi.de/wp-content/uploads/2018/11/DIVSI-U25-Studie-euphorie.pdf>, p. 72 f.

14- to 24-year-olds surveyed by DIVSI in 2018⁶⁶⁶ see malware and spying on access data as well as fraud as the greatest risk online. However, stalking, abuse and bullying were also perceived as major risks by up to 40% of those surveyed. There are definitely gender-specific differences here: young women perceive numerous risk aspects more often, boys and young men see many things as problematic a little less often,⁶⁶⁷ with a strong difference of perception on stalking and hate speech:

⁶⁶⁵ Ibid.

⁶⁶⁶ German Institute for Trust and Security on the Internet (2018), p. 72 ff.

⁶⁶⁷ Ibid., p. 76.

Table 26: Perception of risk on the Internet by gender

Risk	Perception of women in %	Perception of men in %
Computer or other devices being infected with malware, e.g. viruses	66	58
Theft of intimate documents (e.g. photos or videos) that I have stored on a device or online/in the cloud	59	51
That my profile is hacked and others post/comment on my behalf	56	47
Unauthorised use of my photos that I have posted on social media offerings	53	43
Publicly posting embarrassing and/or intimate posts or chats	51	41
Fake profiles, i.e. Deception through fake user profiles (e.g. on Facebook, Instagram)	49	39
Stalking (repeatedly stalking and harassing someone; creeping up on someone)	48	35
Abuse on the Internet (e.g. verbal abuse or hate comments)	47	34
Being beaten up by others (bullying)	41	32

Source: DIVSI: DIVSI U25 study: Euphoria was yesterday, November 2018, <https://www.divsi.de/wp-content/uploads/2018/11/DIVSIU25-Studie-euphorie.pdf>, p. 76.

An increase in sexualised violence against children and adolescents can also be clearly seen online. Studies show that many minors have already had a personal experience with sexual assault or cyber grooming online.⁶⁶⁸

E.4 Do Internet users report that they are exposed to significant levels of harassment by other Internet users that prevents them from making full use of the Internet?

► **Indicator:** *Availability of reporting mechanisms for online harassment or abuse, including reporting arrangements by online service providers*

In the area of youth protection, complaints about suspected violations of human dignity, hatred or inciting content can be submitted directly to the individual state media authorities (e.g. on the website of the State Agency for Media North Rhine-Westphalia), but the individual state media authorities also carry out their own checks in the event of suspicion and report the result to the

⁶⁶⁸ Cf. e.g. Jugendschutz.net (2019).

KJM. The KJM is supported by the organizationally linked jugenschutz.net, which specialises in the topic of digital violence. Hate content can also be reported via their [reporting offices](#) in order to have them checked for violations of youth media protection law. This project is also funded by the Federal Government.

As the first project of its kind, the '[Tracking instead of just deleting](#)' initiative was launched in 2017. It is a cooperation between the State Agency for Media NRW (LfM NRW) and the central office and contact point Cybercrime North Rhine-Westphalia (ZAC NRW). Within the initiative, the LfM NRW cooperates with the ZAC NRW, set up at the Cologne Public Prosecutor's Office, the State Criminal Police Office of North Rhine-Westphalia and the media companies of media group RTL Deutschland, Rheinische Post and Westdeutscher Rundfunk. Its aim is not only to promptly remove hate speech from comment columns, but also to specifically report punishable statements to the police. Other federal states have implemented similar initiatives or are participating in similar projects. Additional reporting offices at federal level are the reporting point '[respect!](#)' against hate speech on the Internet, where threatening content is received and checked. The reporting office then forwards posts that constitute incitement to hatred, insult, or defamation to the platform operator with a request to delete them. Cases of incitement to hatred in accordance with Section 130 of the Criminal Code are reported by the reporting office for criminal prosecution.⁶⁶⁹ The Hessian service by the reporting office '[Report hate!](#)'⁶⁷⁰ / '[Hessen against agitation](#)' works in a similar way.⁶⁷¹ There is also a [central reporting point](#) for right-wing extremist content on the Internet from jugenschutz.net, which also tries to remove the reported content after the evaluation.⁶⁷² There are also the anti-Semitism reporting offices for [Baden-Württemberg](#)⁶⁷³ and [Report Antisemitism \(nationwide\)](#).⁶⁷⁴

The [Network Enforcement Act \(NetzDG\)](#), which came into force in 2017, serves as the legal basis for measures against digital violence and hate speech, which obliges platforms and intermediaries to provide effective and transparent complaint management and, in Section 4 NetzDG, threatens companies with considerable fines. An [amendment](#) was prepared in 2020 that also expanded the perspective of the NetzDG with regard to hate crime.⁶⁷⁵ To more effectively fight against right-wing extremism and hate crime, the Federal Criminal Police Office (BKA) is also working on setting up a reporting office for criminally relevant network content. The law essentially provides for improvements in the handling of reported/criminal content: threats, insults or slander against people in local politics expressed in social media should in future fall

669 Democracy Center Baden-Württemberg (2020a).

670 Report Hate (2020).

671 Hessen against agitation (2020).

672 Hate on the Net (2020).

673 Democracy Center Baden-Württemberg (2020b).

674 Report Antisemitism (2020).

675 Federal Ministry of Justice and Consumer Protection (2020).

under the criminal code.⁶⁷⁶ In certain cases, large platforms such as Facebook or Twitter not only have to delete content that has been complained about, but also report it to the BKA.⁶⁷⁷

The law against right-wing extremism and hate crime can certainly be understood in such a way that both the right-wing extremism factor and the gender dimension are considered. Transparency reports by platform providers that go beyond the provisions of the NetzDG⁶⁷⁸ are still not specifically prescribed; however, with a view to finding out about gender-specific and intersectionally related forms of, for example, hate speech, these would be very helpful. The same applies to an expansion of the categories of the Federal Criminal Police Office's crime statistics to include the category of digital (domestic) violence and gender as well as misogynist motives (keyword: contempt for women as group-related misanthropy).⁶⁷⁹

► **Indicator:** *Data on the extent to which Internet users report harassment or abuse, with particular reference to certain demographic and social groups (including women, ethnic and other minorities and people who stand up for the rights of the population)*

The figures from the Federal Criminal Police Office on the complex of hate speech show that a large part of the hate comments (77%) 'can be assigned to the right-wing extremist spectrum, a mere 9% of the comments are from left-wing extremists'.⁶⁸⁰ The remaining 14% can be assigned to other ideologies or show no particular political motivation.

With a view to a gender-specific, intersectional component in the area of hate speech, the nationwide representative study '#Hate on the Net: The gradual attack on our democracy' came to the conclusion in June 2019 that around 14% of people with a migration background have already been attacked by hate speech, compared to 6% of people without a migration background.⁶⁸¹

The study 'Hate at the push of a button', published in 2018 by the Institute for Strategic Dialogue (ISD) and the Facebook action group #ichbinhier, also showed that there had been a significant increase in coordinated hate online. According to an analysis of over 1.6 million right-wing extremist posts on social media (Twitter and public Facebook pages) in the period from February 2017 to February 2018, on the one hand, explicitly racist, anti-Muslim and anti-Semitic posts have decreased since the NetzDG came into force in October 2017; on

676 Ibid.

677 Ibid.

678 Transparency reports, see e.g. Facebook (2020).

679 German Association of Women Lawyers (2019).

680 Federal Criminal Police Office (2019) and, in general: Federal Criminal Police Office (2020).

681 Geschke, D. et al. (2019), p. 23.

the other hand, however, coordinated right-wing extremist online hate campaigns have been on average more than three times as frequent since December 2017 than in previous months. The study also shows that these campaigns are often aimed at putting people in politics, media professionals and politically active people under pressure and intimidating them.⁶⁸²

Amnesty International also confirmed in 2018 that ‘women with dark skin, women of religious or ethnic minorities, lesbian, bisexual, transsexual or intersexual (LBTI) women, women with disabilities or non-binary persons who do not conform to traditional gender norms for men and women, are often exposed to forms of digital violence [on the Internet] that affect them in a unique or special way.’⁶⁸³

At the same time, Amnesty International points out that women like activists who campaign specifically for women’s rights and women who are public figures like journalists and politicians are particularly affected by hate speech.⁶⁸⁴ This amalgamation of vulnerability factors also confirms what the no-hate speech movement founded by the Council of Europe records: ‘If you look at which women are affected by hate speech, it is noticeable that, in addition to Muslim and refugee women, this phenomenon mainly affects feminists and women who are in the public eye.’⁶⁸⁵

Although we were hardly able to find any specific statistics for this complex in Germany, international studies suggest that similar systemic patterns of discrimination are passed on here in the same form.

The currently most recent study #Hass im Netz, on the experiences of German Internet users with hate speech on the Internet, clearly shows that people who experience hate speech often withdraw from the Internet. So-called silencing caused by hate speech is often used specifically to take action against certain (marginalised) groups. With a view to those responsible, this almost always has no legal consequences, but it is not uncommon for those affected to withdraw; almost half (47%) of respondents aged 18 and over in Germany confirmed the statement: ‘I take part less often in discussions on the Internet because of hate speech.’⁶⁸⁶ This study also makes it clear which groups in Germany are the targets of hate speech: this includes mostly people with a migration background, people of Muslim and Jewish faith, refugees, women,

682 Ebner, J. et al. (2018); The Identitarian movement, whose hashtags are regularly picked up from AfD accounts and Russian media such as RT and Sputnik, dominates this field.

683 ‘In the case of online violence and abuse, women of color, women from religious or ethnic minorities, lesbian, bisexual, transgender or intersex (LBTI) women, women with disabilities, or non-binary individuals who do not conform to traditional gender norms of male and female, will often experience abuse that targets them in a unique or compounded way.’ Amnesty International (2018), chapter 2.

684 Ibid.

685 Geisler, S. (2016).

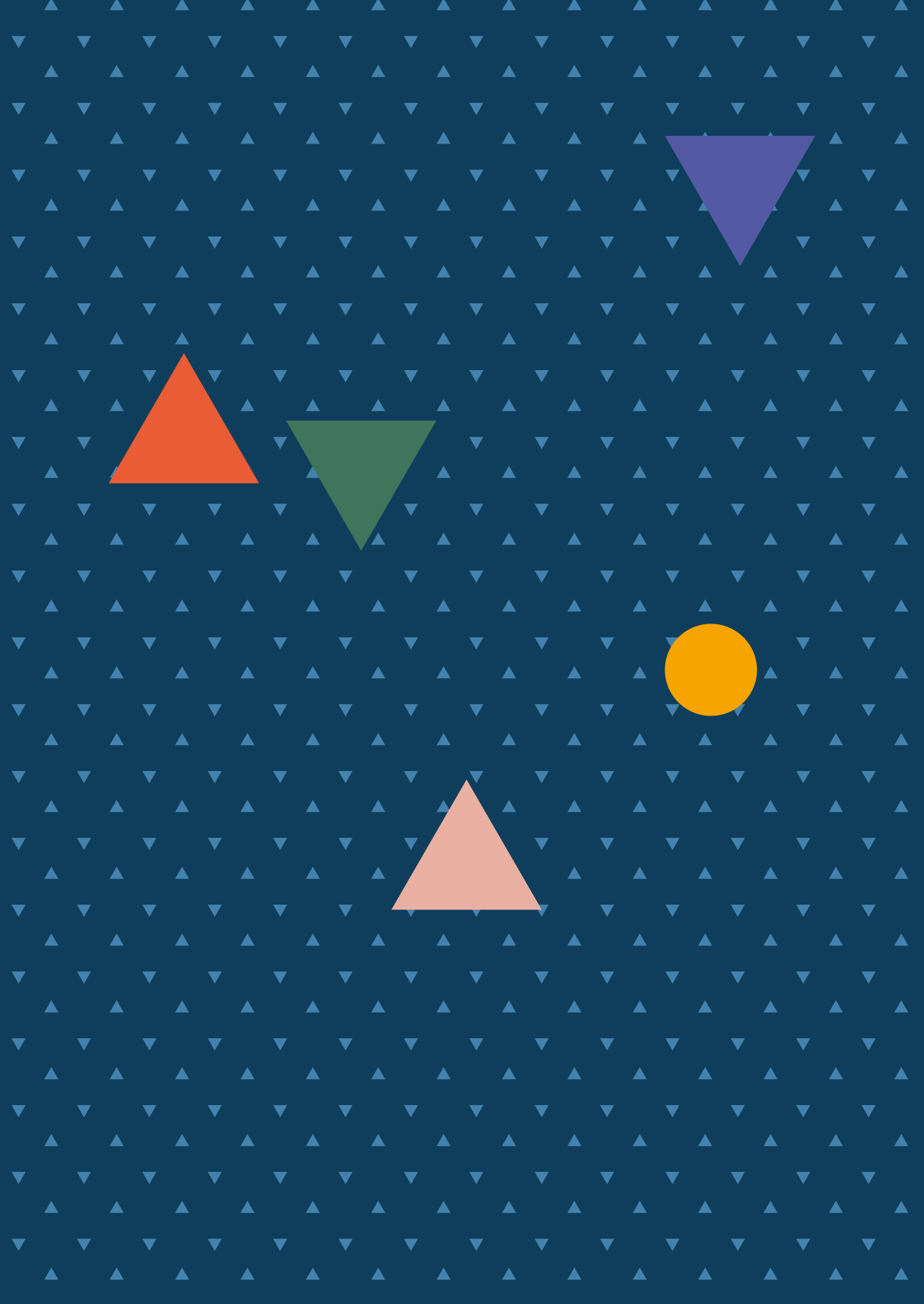
686 Geschke, D. et al. (2019), p. 28.

people who do not conform to the current ideal of beauty, homosexual and transsexual people, people who are economically disadvantaged and people with disabilities.⁶⁸⁷

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For this chapter, the recommendations for various stakeholders are summarised in chapter 8.

⁶⁸⁷ Ibid., p. 20.



8

CONCLUSIONS AND KEY PRIORITY RECOMMENDATIONS BY STAKEHOLDER GROUPS

The Internet in Germany: a public good, a fundamental right and the backbone of digitalisation

In the country where Gutenberg's letterpress printing technique launched a media revolution, the overall state of the Internet is good. In all central categories of digitalisation – rights, openness, access, multi-stakeholder participation and social framework – the indicators point to a positive development. Under the conditions of digitalisation, in 2020, this means that security sensitive Internet access and competence-based confident Internet use are essential and will become increasingly important. Nevertheless, there is room for improvement in the coherent policy development, the coordination of digital funding measures and the safeguarding of the use of the Internet by all people in a way that preserves fundamental rights. Important state actors are committed to a digitalised Germany: 'The Internet is the backbone of digitalisation. The Federal Government protects it as a public good and a fundamental right,' says Federal Government Commissioner for Digitalisation Dorothee Bär. And in the words of former Federal Justice Minister Katarina Barley: 'The Internet is a public good. Access to it must be open to everyone.'

91% of Germans already use the Internet and 16.5 million .de domains are registered. German policy makers have committed themselves, at the highest level, to the right to Internet access for everyone. By 2025, the government wants to create a legal right to nationwide access to high-speed Internet and promote broadband expansion. In an international comparison, this lags significantly behind; although the speed of Internet connections in Germany has doubled overall in the past three years, there are definitely strong regional fluctuations with regard to rural regions and the eastern federal states.

Human dignity also includes the possibility of establishing communicative relationships, which is made more difficult under the conditions of digitalisation without Internet access. The full and equal participation of everyone has to be ensured in all areas of activity of government with a digital aspect by using the right tools and measures. This includes being alert to problems with respect to data collection, better promotion of gender sensitive cultural change in the technology industry as well as the structural and substantive expansion of the protection of the fundamental rights of vulnerable groups – especially those who are exposed in multiple ways. A development that is jeopardising both individual rights and social cohesion is the prevalence of hate speech and digital violence on the Internet. This particularly affects women as well as people and groups who have experienced marginalisation. The research in Germany is not sufficient, also due to a lack of disaggregated data.

There are many efforts by the government to promote the coherence of the digital agendas. Approaches such as drawing up a 'digital budget' and the digital dashboard are expedient. Regular updates of political strategies with a digital reference, such as the federal AI strategy, appear just as useful. Several ministries have systematically built up competencies, but the sustainable coordination of activities can still be optimised.

Ensuring the digital sovereignty of Germany in the 21st century requires coordinated measures. In order to be able to redesign German digital policy on the basis of the findings of the analysis and evaluation according to the ROAM-X indicators of UNESCO, existing target conflicts must be resolved or at least identified. This includes linking the very publicly communicated aspirations of the German government at national and EU levels for digital sovereignty with a commitment to a global digital policy. The digital sovereignty highlighted in several strategy documents is understood in Germany as a cornerstone for the self-determination and the ability to act and make decisions on the part of the state, the German economy and the German population.

The 'Internet' policy field is firmly anchored in German politics. Digital domestic policy is increasingly perceived as a task for all societal creative forces. Important agendas relevant to digitalisation are the responsibility of different ministries. This requires the mutual recognition of the role and importance of different specialist policies, such as those for the network and media, the economy and industry, education, integration and culture (each with their own operators, instruments and logics) for sustainable digitalisation within the framework of a coherent digitalisation policy in Germany. Therefore, it makes sense to transition from various Internet policies (or policies with relevance for the Internet) to a cross-disciplinary, sustainable digitalisation policy; yet, at the same time, this needs to be a policy that is sustainable, protects fundamental rights, promotes cohesion and drives innovation.

There are still deficits in the equal access of everyone to the opportunities inherent in digitalisation. Especially intersectional experiences of discrimination, immigrant backgrounds, non-traditional educational and employment biographies as well as age are powerful factors that jeopardise the full realisation of all human rights for everyone on the Internet and through the Internet in Germany.

We have too few reliable data about those who do not use the Internet, about the use of the Internet by people with immigrant backgrounds and about those who have (often multiple) experiences of discrimination and exclusion in Germany - mediated by the Internet and amplified by the platform logic -, those confronted with 'digital violence' or even criminals who were radicalised on the Internet in offline contexts.

Comprehensive, equal participation for everyone on the Internet requires a cultural change in information technology and the STEM subjects, an expansion of the protection of fundamental rights for particularly vulnerable groups and the proactive promotion of measures to overcome

traditional stereotypes. Promoting the acquisition of 'digital skills' by girls and women is an important contribution to overcoming the digital gender gap.⁶⁸⁸

Important legislative amendments in the digital arena relating to UNESCO's ROAM-X principles result from the need to implement EU law, which is why its effect, especially in the area of media regulations and the governance of intermediaries, is essential.

In the discussion about formulating German digital foreign policy, safeguarding international communication flows and understanding, regardless of borders, so that they are protected, in particular in a way as set in the UN civil pact, plays an important role. Germany is making a constructive contribution to the reform processes related to the architectures for digital cooperation and is providing substantial support for global multi-stakeholder-based Internet governance. It is one of the few countries that consistently supports multi-stakeholder-based initiatives in the field of digital policy and Internet governance on a global level in the medium and long term.

Major Findings and Challenges categorized by ROAM-X indicators

CATEGORY R - Rights

Digitally relevant fundamental and human rights are protected by German authorities and courts on the basis of the Basic Law and European and international human rights. Although fundamental and human rights in analogue and digital spaces generally enjoy the same protection, the fact that these spaces are primarily privately regulated leads to practical difficulties in enforcing the law. Therefore, legal protection in the event of legal violations by companies and the enforcement of human rights standards should be improved, which is also a goal of the Network Enforcement Act (NetzDG). The law, which was introduced as the world's first law to regulate the content governance practices of platforms, has been met with serious European and constitutional concerns. It was amended twice in 2020. It would have been advisable to wait for the evaluation of the original NetzDG - which was only presented in June 2020 - to be completed. In any case, a mandatory human rights impact assessment in addition to a meaningful legal impact assessment appears to be necessary as part of the digital legislative process in the future.

688 UNESCO (2019b).

According to the constitution, data protection in Germany is guaranteed within the scope of the right to informational self-determination under Art. 1 (1) and 2 (1) GG. In addition, the GDPR has a key regulatory function. Data access, data interception, data storage and, in particular, data retention are regulated by law in Germany and are monitored by the Federal Commissioner for Data Protection and Information Security (BfDI).

The rules on provider liability in Germany seem balanced. In addition, legal liability for providers of open wireless networks, so-called hotspots, was largely abolished in 2017. People in Germany enjoy special protection through the court-developed basic right to guarantee the confidentiality and integrity of information technology systems. Media professionals, especially those involved in participatory journalism and those who write blogs, must be protected from intimidation in connection with their work. The comprehensive implementation of the E-Government Act (EGovG) and the Online Access Act (OZG) must be ensured through state efforts and appropriate funding, as was most recently planned in the federal budget for 2021.

There is potential for improvements both in the area of the E-Government Development Index (EGDI) and in relation to the E-Participation Index (EPI) – these are being sought by the Federal Government's new Chief Information Officer. However, this will depend on which interest groups and specialist groups are involved in the development of strategies for a digital future, including in the area of open data and open educational resources. The consideration of different interest groups and diverse perspectives is to be welcomed here.

CATEGORY O - Openness

An open Internet is of key importance for dynamic digitalisation. Germany is among the top ten countries in the Network Readiness Index, which measures the potential of different countries to make (innovatively) use of the opportunities offered by information and communication technology (ICT), although Germany's good economic output is particularly decisive for Germany's good position in the ranking. Every fifth newly founded company has strong digital relevance. There is development potential in the area of the expansion of digital administrative services as part of the implementation of the Online Access Act and the promotion of digital innovations in administration, especially through the expansion of user-friendly digital administrative platforms for the population and for companies. However, improving the environment for start-ups by increasing the number of customised financing instruments (e.g. through more venture capital), closer interlinking of start-ups and medium-sized companies and funding for women business founders and people with an immigration background would be advisable.

The openness of the Internet has both technical and legal dimensions. From a technical point of view, the Internet in Germany is largely stable. It should be positively emphasised that despite the increased use of telephone, video conferencing and streaming in COVID-19 times, there was no network overload in Germany. Nevertheless, further legal measures to ensure the openness of the Internet in Germany are of great importance. The Federal Ministry for Economic Affairs and Energy (BMWi) wants to create a new regulatory framework for the digital economy and, in particular, to strengthen abuse monitoring for the powerful digital companies and tighten the regulation for market dominating companies. Here, an agreement with measures from the European Commission should to be sought. Legal measures such as the E-Government Act, with which Germany is taking a further step towards transparent government action and open data, are to be assessed positively. The regulatory content of the legislation is the duty of the authorities of the direct federal administration agencies, which publish the unprocessed 'raw data' that they have collected. With GovData, which was founded via an administrative agreement, a data portal was created to pool and visualise the open data provided by the government, federal state and local administrations.

Germany's ability to shape digitalisation according to its own priorities – developed in dialogue with European partners – requires a certain degree of digital sovereignty, although this concept, which has meanwhile been strongly present in policy debates, has to be put into practice via specific measures. In the short term already there need to be policy responses to dependencies on individual products (individual providers), although European consensus would be desirable, especially with regard to decisions for or against certain providers that would be relevant for many years. All products in the digitalisation value chain need to be reviewed in procurement processes with a view to existing dependencies. It would also make sense to use open data and open source software when expanding e-government and when interlinking innovation-driving projects.

Digitalisation policy has to start early. Digital education and the imparting of digital skills as a cross-sectional matter need to be planned for at every stage of the educational biography. The presence of appropriate learning objectives in the curricula of the federal states would encourage the use of technology. Experience and good practices can also be gathered through the activities of the Standing Conference of Ministers of Education and Cultural Affairs in order to be able to positively influence the process of reforming the curricula in the federal states. The COVID crisis has shown that the German educational structures were able to deal with special challenges after some initial difficulties, nevertheless, there is still potential for optimisation, especially with regard to digital equipment and digital teaching formats. In addition, the crisis showed that there were considerable differences, for example in schools, with regard to 'digital readiness'. It would be advisable to start a process of self-reflection on the extent to which the visibility and acceptance of Open Access and Open Educational Resources in the German education and science systems could be increased.

CATEGORY A - Accessibility to All

According to various sources, between 91% and 94% of households in Germany use the Internet. 100% of young people (16–24 years of age) now use the Internet. The costs for Internet access are still high in an international comparison, but are falling slightly.

While the number of social media users hardly changed in 2019 compared to 2018, the duration of use of social media increased significantly. On working days, women spend an average of 106 minutes a day on social media, which is an increase of 28 minutes compared to 2018, while men spend an average of 81 minutes on social media on working days.

There are large differences in Internet use with regard to a job/activity: some 96% of Germans with a job use the Internet, while only 68% of the unemployed do so. The usage is similarly distributed among people according to educational qualifications: 96% of Germans with a higher educational qualification are online – in contrast to around 60% of Germans with a lower educational qualification. Differences in access to the Internet can also be found with a view to household income: in households with a monthly income of less than 820 euros (1,000 dollars) only 40% access the Internet, whereas in households with 2,460 euros (3,000 dollars) and have more available, about 66% move online. Increasingly, data must be collected about the particular challenges that arise when people with a migration background use the Internet and how people who do not use the Internet can be taught the benefits of using the Internet independently and skilfully.

The broadband expansion in Germany is clearly lagging behind in an international comparison; although the speed of Internet connections in Germany has doubled overall in the past three years, there are definitely strong regional fluctuations with regard to rural regions and the eastern federal states as well as small towns with fewer than 10,000 people. In the coalition agreement of 2018, the government committed itself to creating a legal right to nationwide access to high-speed Internet by 2025. From the point of view of business, the rapid expansion of digital infrastructures is the most important basic requirement for future-proof international competitiveness as well as for the future viability of the Internet economy and Germany as a whole as a location for business. The predominantly private-sector expansion of gigabit networks is seen as the most important pillar for achieving the German and European gigabit targets. The availability and supply of broadband Internet access has meanwhile become an important location factor for companies to settle here. Websites of the highest federal institutions provide information about their offers in up to 19 languages (Bundestag). The fact that family and health-related content online are available in many languages (including languages with particular relevance for people with migration experience) is to be welcomed. However, the fact that the integration officer only provides information in German seems inconsistent.

Education and upbringing is a matter for the federal states, but the federal states coordinate themselves in the Standing Conference of Ministers of Education and Cultural Affairs. The 'Education in the Digital World' strategy adopted in 2016 aims, among other things, to enable all children to have digital learning environments and access to the Internet by 2021. There are specialist profiles relating to media and information literacy as well as ICT skills in a good half of the states already for the primary level and almost everywhere for secondary levels I and II. In May 2019, the 'DigitalPact School' came into effect, which makes available funding totalling five billion euros.

CATEGORY M - Multi-Stakeholder participation

Germany is effectively helping to shape the guidelines of future Internet governance internationally and is constantly and strategically advocating Internet governance based on the multi-stakeholder approach. Germany is a member state of the International Telecommunication Union (ITU) and one of the main supporters and advocates of Internet governance based on the participation of all stakeholder groups (multi-stakeholder governance).

The Federal Ministry for Economic Affairs and Energy (BMWi) is primarily responsible for the Internet issues. It also prepared the Internet Governance Forum 2019 in Berlin, supported by the Federal Government, together with the United Nations. On the part of the government, a clear commitment to the promotion of multi-stakeholder-based Internet governance has been expressed. In view of the growing authoritarian tendencies in the digital policies of other countries, it is important that Germany continues to advocate the multi-stakeholder model and human-centred, development-oriented Internet governance based on international law and the principles of the Charter of the United Nations, and support corresponding initiatives locally, regionally and internationally, as in the past.

The government has made a clear commitment to promoting multi-stakeholder-based Internet governance approaches. This is also a core component of [the Federal Government's digital agenda](#). Critics of multi-stakeholder-based Internet governance among German policy makers have become silent, even if a comprehensive theorisation of multi-stakeholderism is still pending.

The Federal Government actively involves other interest groups in the development of national Internet guidelines and Internet-related legislative projects. Approaches to increase the involvement of groups from the *Mittelstand* should be pursued further. Comprehensive consultation processes and the digital summit are just as welcome as ad-hoc models that enable the population to participate in order to raise the legitimacy of global reform processes of the digital cooperation

infrastructure. The support of international study groups such as the Internet & Jurisdiction Policy Network to identify the obstacles to cross-border communication flows is also seen as positive.

The central operator in shaping the participation of various stakeholders is the annual Internet Governance Forum Germany (IGF-D), which took place for the 12th time in 2020. The data on the participants over the last two years show that participation has increased significantly. The Youth IGF Germany was launched in 2012 specifically for the younger generation of those interested in Internet policy. Between the meetings of the young IGF-D there are regular events for capacity building and knowledge transfer. German participants are also active in the European Internet Governance Forum (EuroDIG) and the global Internet Governance Forum (IGF). The EuroDIG is an important European platform for discussing Internet policy in the broader sense. The EuroDIG can be strengthened through active German participation. Organising the EuroDIG in Germany in the next few years would be very desirable; the link between IGF-D and EuroDIG must also be strengthened in order to legitimise the relation between the global cooperation architectures and regional and local IGF initiatives.

CATEGORY X - Cross-cutting indicators

The Federal Government takes into account the interests and needs of all disadvantaged groups in national digital strategies and other government strategies with implications for digital Germany. Making the effects of digitalisation and the use of algorithmic systems non-discriminatory and thus helping to reduce gender inequalities is a central goal of the Federal Government. Measures must be taken here, including at the European regulatory level, to ensure transparency and accountability and not hinder innovation. However, there is an imbalance in the number of women and men in government positions dealing with ICT/Internet. The fundamental rights-sensitive handling of gender-specific hate speech and the complex of digital violence would benefit considerably from an increased collection of disaggregated data.

There are few relevant differences between women and men in Germany when it comes to Internet use, usage behaviour and duration of use. However, among the non-users, at 67%, there are significantly more women (of the older age groups, with a lower level of education).

If you look at the issue of gender-specific hate speech and how women are affected, the political discourse remains diffuse, especially in Germany. The entire context of digital violence has so far received neither scientific (which explains the lack of valid data, figures and statistics) nor politically or legally appropriate consideration. Girls and women are not specifically protected from online harassment or violence by the law, although they are more likely to be victims of

these crimes. In addition to hate speech, digital violence has a large number of other variants: These include controlling surveillance technologies such as apps and hardware (especially in the area of domestic digital violence) as well as doxing, stalking and revenge porn. The currently most recent study available on the experiences of German Internet users with hate speech on the Internet clearly shows that people who experience hate speech often withdraw from the Internet. So-called silencing caused by hate speech is often used specifically to take action against members of certain (marginalised) groups. Only rarely do those who commit offences have to fear legal consequences; on the other hand, online attacks often force those affected to withdraw from online communication.

Especially people with migration experience and ethnic minorities are relatively more often affected by hate speech. This is particularly true of people who are in the public eye, such as people in politics and the media. Here Germany has to fulfil its obligation of the comprehensive protection of fundamental rights in all three central dimensions – respect, protect, guarantee. The reform of the Network Enforcement Act, which will come into force in 2021, and the package of measures against right-wing extremism and hate speech provide for improvements in law enforcement and victim protection, but have in some cases raised fundamental rights concerns (e.g. with regard to the proposed reporting office).

In Germany, the Commission for the Protection of Young People in the Media (KJM) is responsible for the central supervision of private broadcasting and telemedia. It ensures that providers comply with the applicable youth protection regulations. The KJM is a 'traveling organ', i.e. the state media authorities watch over the children and young people for whom they are responsible and activate the KJM in the event of possible violations, which then checks and decides on violations. The responsible state media authority then assumes the decision and carries out the proceedings against the provider. The self-assessment of children and adolescents in Germany with regard to online-related skills is predominantly positive. On the other hand, 9% of children and adolescents have experienced something online in the year before the survey that was bad for them or even disturbed them.

To promote sustainability, the federal government founded the Council for Sustainable Development in 2001, which consists of 15 people from the public sphere. Its task is to develop contributions to help implement the German sustainability strategy, to name specific fields of action and projects and to make sustainability an important public concern. Together with the report of the German Advisory Council on Global Change ('Our Common Digital Future' (2019)), these findings and recommendations must be taken into account in the further development of digital policy. In particular, the recommendation expressed in the WGBU report to 'put digitalisation in the service of sustainability' and to move from 'present administration' to 'future design' should develop political leadership. Digitalisation policy can also make a contribution to securing the foundations of human existence and, with appropriate democratic control, secure individual spaces of freedom and strengthen the cohesion of societies. The WGBU also correctly points

out that the development of digital technologies must be embedded in a 'strategy for sustainable development' that has a longer time horizon than 2030, the target year of the UN Sustainable Development Goals (SDGs).

The Federal Criminal Police Office (BKA) publishes an annual report on cybercrime in Germany; most recently in September 2020. It reports that in 2019 there were 100,514 'cyber crimes' in Germany in the narrower sense, which means an increase of 15.4% compared to 2018. The clearance rate is 32.3%. The BKA has calculated the possible amount of damage for cybercrimes in the narrower sense, although this – as the BKA itself states – will by no means correspond to the actual damage.

The comprehensive guarantee of cybersecurity internally and the contribution to increasing cybersecurity through responsible state behaviour externally are central state tasks that must be taken seriously by all state authorities, especially the judiciary and administration. Particularly in view of the growing differentiation in responsibility for cybersecurity, close interlinking of EU, federal and federal state authorities is just as important as clarifying the lines of responsibility within the national cybersecurity architecture.

The Federal Government has been using a 'Digital Policy Dashboard'⁶⁸⁹ since 2020 to show to the public the steps to implement the digitalisation strategy. The dashboard shows the progress of digital policy with a view to 663 planned implementation steps, of which around 33% have already been completed by September 2020, 48% are ongoing, 13% are in planning and 6% are still outstanding. This means that the proportion of steps that have already been completed has increased by 10% in 12 months.

A particularly small proportion (23%) has only been completed in the area of 'society', while in the areas of 'competence', 'infrastructure', 'innovation' and 'modern state' more than 30% of the steps have already been completed.

In the European EU comparison, according to the DESI index, which awards points from 0–100 for the five components 'digital public services', 'integration of digital technology', 'use of Internet services', 'human capital' and 'connectivity', Germany takes a lower midfield position with around 280 out of 500 possible points but is still just above the European average.

⁶⁸⁹ Digital made in de (2020).

Key Recommendations for Action by Stakeholder Groups

Category R – Rights

Government

- Further safeguarding of the high level of legal protection on the Internet by international comparison through fundamental rights-sensitive legislation, investments in digital-compatible training of all public authorities working in fundamental rights-sensitive areas and securing the resources of the judiciary and administration
- Introduction of a mandatory Human Rights Impact Assessment as part of the digital legislative process
- Expansion of effective security mechanisms (e.g. establishment of a multi-stakeholder-based, industry-wide advisory board) on the fundamental and human rights monitoring of rule formation and application in Internet platforms, in particular with regard to effective collective law enforcement mechanisms in the digital context
- Comprehensive protection of the press, including participatory journalism and bloggers, against threats to the confidentiality of their communication and attacks in the course of their work
- Maintaining support for multi-stakeholder-based initiatives in the field of digital policy and Internet governance at local, regional and global levels
- Greater consideration of the inherent advantages of the Internet in terms of cross-border access to information as an important protection goal along with the protection of other legal interests in the development of digital policy regulations
- Implementation of the coalition agreement of 2018 with the plan to create a legal right to nationwide access to high-speed Internet by 2025 and implementation of the infrastructure measures that are necessary for this, possibly in cooperation with the private sector
- Design and implementation of measures to overcome the 'digital divide' in Internet use between working Germans (96%) and the unemployed (68%) and to counteract differences in educational biographies
- Promotion of digital education while respecting educational federalism

- Investing in the digitalisation of schools while respecting educational federalism, in particular through the impact-oriented realisation of the 'DigitalPact School' as well as ensuring a basic digital standard in schools and the increased teaching of digital skills as an interdisciplinary topic and school subject
- More support for ICT-related teacher training so that such skills continue to benefit, but no longer depend on, self-initiative and self-taught teaching skills
- More systematic promotion of openly licensed teaching and learning materials (OER) through prioritisation within the framework of political and regulatory framework processes and removal of existing barriers, for example in copyright law
- Expansion of digital administrative services as part of the implementation of the Online Access Act and promotion of digital innovations in administration
- Consideration of the special challenges of an appropriate regulation of Internet-mediated communication in concepts for the reorganization of the European media order
- Further engagement in international cooperation formats for a human rights-based digital policy
- Expansion of empirical law-making in the digital sector, for example through increased implementation of evaluations and waiting for their results before amendments to laws
- Consideration of the international role model effect of Germany in the adoption of new laws with digital relevance
- Ensuring a comprehensive implementation of the E-Government Act (EGovG) and the Online Access Act (OZG) through appropriate funding
- Investing in the digitalisation of schools in compliance with educational federalism, in particular ensuring a digital basic supply for all students and teachers and promoting digital capacity building as a cross-discipline issue and computer science as a subject

Judiciary

- Protection of the right of access to the Internet and Internet content
- Consideration of the rulings on similar issues, for example on platform law, to ensure predictable decisions, in particular to raise awareness of the challenges of extraterritorial effects of rulings in the digital context
- Expansion of the Internet-related training modules in training all those involved in the judicial sector

Private sector

- Implementation of the legal transparency and facilitation obligations that exist, depending on the size of the platform, taking into account the recommendation of the Council of Europe on the role and responsibility of states and Internet intermediaries
- Consideration of due diligence with regard to the observance of human rights
- Securing the highest possible level of protection for data while taking due account of European legal developments
- Improvement of the cooperation with German courts, in particular with regard to service, and rapid implementation of binding decisions
- Consideration of the duty of care with regard to the observance of human rights
- Protection of the rights of employees in the digitalisation-driven structural change processes
- Promotion of training and further education as well as professional qualification and development of digital skills for employees

Technical community

- In addition to ensuring the legality of all products, especially the consideration of ethical values and goals, such as achieving the highest possible degree of privacy protection, in the development of technical standards and products

Civil society

- Follow-up of the watchdog role for state and private activities in cyberspace
- Use of the increased opportunities for participation through Internet activism, e.g. through online participation of the population
- More conscious engagement and a self-training offensive by civil society organizations at local and regional levels outside of specifically 'digital political' organizations in order to thoroughly understand the value and effect of digitalisation on and for civil society engagement
- Popularisation of the importance of legislation and regulation in the digital space for a future-proof democracy and also future space for civil society to act

Category O – Openness

Government

- Expansion of digital administrative services as part of the implementation of the Online Access Act and promotion of digital innovations in administration
- Expansion of user-friendly digital administration platforms for the population and for companies
- Increasing the variety of software and increased use of open source software, among other things by anchoring it in political declarations
- More conscious collection of reliable figures on the current status of digital accessibility
- Support of the private sector by implementing the accessibility requirements for products and services in the context of the implementation of European legal requirements
- Promotion of measures to support people with cognitive impairments in using the Internet
- Further funding of projects on open educational resources
- Continuation of the information initiative for the sustainable anchoring of an open access culture in science and the promotion of open access publications
- Continuation and expansion of GovData as an interface between federally structured data collection agencies
- With a view to the planned use of AI for sovereign tasks, the considerations of the data ethics committee should be included

Private sector

- Private participants who offer services for the general public in a digital context should increasingly make information and services available in formats that are accessible and usable for people with disabilities
- Strengthening the cooperation between start-ups and medium-sized companies as a success factor in the digital economy

Civil society

- Increased focus on open source and open resources for the common good, including the possible use of AI in this area
- Partnerships with academia to produce and popularise Open Educational Resources and Open Access materials

Academia

- Development of manageable human rights assessment methods to implement procedures for assessing human rights impacts
- Continuation of the critical monitoring of network policy and digital legislation at national and European level
- Development and reinforcement of transfer research formats to optimise the ‘translation’ of academic knowledge in a way that is tailored to recipients
- Entering a process of self-reflection on the extent to which visibility and acceptance of Open Access can be increased in the entire German academic system
- Elaboration of digital ‘technical concepts’ and expansion of digital teaching and learning concepts
- Optimisation of cross-location transfer cooperation
- New forms of knowledge work and knowledge transfer into society
- Conscious production of open educational resources and open access materials in cooperation with civil society

Category A – Access

Government

- Guarantee of access to the Internet, to be provided through state infrastructure measures and legislative activities, as a prerequisite for the exercise of human rights on and through the Internet.
- Measures should be taken to overcome the ‘gap’ in Internet use between people in employment (96%) and the unemployed (68%) and to counteract differences in educational biographies.
- Implementation of the coalition agreement of 2018 with the plan to create a legal right to nationwide access to high-speed Internet by 2025
- Expansion of the language offerings on ministry websites with special consideration of the language needs of people with migration experience
- Establishment of a competence centre for the digitalisation of cities and municipalities
- Expansion of broadband Internet offerings for rural communities and small towns with a population of less than 10,000 people

- Promotion of Internet access for lower-income households and promotion of measures to enable people without access to do so
- Area-wide expansion of publicly financed free WiFi offers and hotspots
- Comprehensive implementation of the ‘Education in the Digital World’ strategy of the Conference of Ministers of Education
- Promotion of digital education while respecting educational federalism
- State review of infrastructures and use of networked systems and preservation of the digital sovereignty of the population

Judiciary

- Realisation of the right to Internet access by updating the relevant case law, which sees Internet access as a prerequisite for extensive participation in the social communication structures of society

Private sector

- Reinforcement of the contribution to increased Internet access and better bandwidth through investments and user-oriented, sensitive pricing
- Participation in public network expansion
- Expansion of (cloud and colocation) data centres

Technical community

- Development of inexpensive Internet access alternatives for people with special access needs or with non-linear educational and employment biographies
- Strengthening the cooperation with schools to highlight computer science as a separate subject in addition to the cross-sectional treatment of digitalisation, using regional and country-specific experimental spaces and real-world laboratories
- Optimisation of apps and websites with a view to cross-generational usability
- Greater involvement of groups and genders historically less represented in the technical community in the development of IC technologies and products

Civil society

- Expansion of educational offerings and support measures for people who have or perceive access difficulties

Academia

- Further research into the effects of both a lack of Internet access and excessive Internet use from a socio-medical, psychological, developmental, biological and sociological perspective
- Increased collection of relevant data to evaluate increasing digitalisation and Internet access in a cross-social analysis
- Studies on the effectiveness of (federal) state digital education in schools in a country comparison; formulation of good practice approaches and identification of 'sandboxes'

Category M - Multi-stakeholder participation

Government

- Making use of the special responsibility as a member of the UN Human Rights Council, as a non-permanent member of the UN Security Council and as a member of the EU Council Presidency Troika (2019-2021), and developing digital policy based on human and international rights, based on the principles of multi-stakeholder governance to continue promoting policy development in all forums as part of a strategic commitment
- Clarification of the lines of responsibility within the national cybersecurity architecture
- Strengthening consumer protection by improving consumer-friendly offers as well as increasing risk awareness and enabling people to develop awareness of information security through appropriate initiatives
- Continuation of the integration of all interest groups in the development of national Internet guidelines and Internet-related legislative projects through extensive consultation processes
- Involving civil society and academia in public consultations, workshops, working groups and surveys, setting reasonable deadlines
- Enabling external control of legislative proposals and strategies, for example through indicators of success
- Promote science access to public and private data as a basis for science-based policy
- Comprehensive implementation of participatory dialogues to strengthen the legitimacy of national policy development in the digital sector
- Continuation of the support of the Internet Governance Forum-Germany and continuous involvement with the Internet Governance Forum, based on the experiences in Berlin 2019, in particular with regard to the MP track for the reform of the global digital cooperation architecture

- Continuation of the participation of specialists, especially SMEs and startups, in international standardisation processes
- Increased participation in programmes to provide disadvantaged groups with access to Internet governance formats
- Continuation of the support of the EuroDIG and consideration of the possibility of organising one of the next EuroDIGs in Germany
- In light of the importance of the ITU for the design of the digital communication space, it is welcome and continues to make sense that non-governmental stakeholders be included in German delegations

Private sector

- Mutual recognition of the respective roles of the actors (e.g. IT industry and media) as a prerequisite for the development of a future-oriented governance framework based on the ROAM-X criteria of UNESCO
- Increased involvement in the Internet Governance Forum Germany and in global Internet governance forums
- Overcoming the underrepresentation of women in the MINT area and targeted participation of all genders in the development of IC technologies
- Supporting the Federal Government through active participation in consultations and strategy development as well as in delegations to international standardisation and norm development forums

Technical community

- More active participation in digital policy consultations of the federal government, in particular participation in international standard-setting procedures coordinated by specialist organizations
- Continuation of the youth IGF organization by the Informatics Society and increased integration of young people of all genders in all digital decision-making structures
- Increased involvement in the Internet Governance Forum Germany
- Development of methods to support law enforcement authorities in combating digital violence effectively while safeguarding important legal interests, privacy and data protection

Civil society

- Active participation in multi-stakeholder processes in (international) digital politics, especially through gender-equitable youth representation
- Continuing the consolidation of the technical and organizational structures that support and enable the Internet Governance Forum Germany

Academia

- Constructive questioning of the conveyance of legitimacy and effectiveness of multi-stakeholder processes and development of advanced concepts
- Scientific support for the Internet Governance Forum, the EuroDIG and the IGF-D process

Category X - cross-cutting indicators

Government

- Legislative measures to promote the most discrimination-free design and use of digitalisation and algorithmic systems
- Expansion of the gender equality index specifically for the ICT/Internet area, using the findings of the Third Gender Equality Report
- Ongoing special consideration of the interests and needs of intersectionally discriminated groups in national digital policy strategies
- Reducing the disparity in the number of women and men in leadership positions related to digital policy in government
- Arranging for statistical information to be collected on digital violence against women and girls and other intersectionally discriminated groups
- Intensification of government policies to promote Internet use by people with a migrant background (based on reliable data to be collected)
- Promotion of comprehensive equality between girls and women in all areas of 'the Internet', from ICT education and the promotion of STEM teaching to the provision of instruments to fight against experiences of discrimination and exclusion on the Internet, including the prohibition of all forms of 'Digital violence' in the light of the danger of radicalisation experiences and offline acts
- Introduction of a further category (diverse) in gender-specific analysis tools and data collection in order not to reinforce gender-specific experiences of discrimination through gender binarisation already in the data collection

- Continuing efforts to combat gender stereotypes in the media
- Expansion of support services for companies affected by cybercrime
- Increase in Germany's expenditure (in development cooperation) with a view to the UN's 'Decade of Action' to achieve the goals of sustainable development with digital relevance

Judiciary

- Special consideration of the dangers and manifestations of digital violence in the training for all levels of use of the judiciary
- Development of cyber forensics capabilities in all areas of the judiciary
- Increasing the number of prosecutors specialising in cybercrime
- Establishment of hate speech/digital violence officers at the public prosecutor's offices

Private sector

- All genders are to be equally involved in the development of ICT technologies
- The underrepresentation of women in the MINT area, which is part of digitalisation, must be overcome
- Protection of the rights of employees in the digitalisation-driven structural change processes, therefore reviews of occupational health and safety in the digital world of work, especially of precarious workers
- Increasing the risk awareness of the workforce and 'cyber literacy' through conscious measures to maximise safety

Technical community

- Development of methods to support law enforcement authorities in combating digital violence effectively while safeguarding important legal interests, privacy and data protection

Civil society

- Promoting awareness of the consequences of one's own online actions as a risk factor for others
- Conscious promotion of offers for children, young people and parents to minimise content and interaction-related risks as well as commercial risks, but also to deal with problematic content generated by users and to self-regulate the duration of use

Academia

- Collection of valid numbers and statistics on gendered hate speech and digital violence, using diversity-sensitive categories in the awareness of intersectional contexts and exclusion systems and making this data available while preserving privacy
- Formulation of target group and risk-specific approaches to support children and young people in leveraging the potential of the Internet and to give them and their guardians a healthy understanding of risk

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Glossary

Audiovisual Media Services Directive

Directive of the European Union for the coordination of national legislation of its member states of the EU with regard to audiovisual media, both for linear services (broadcasting) and for on-demand services.

BEREC Guidelines on the Implementation of the Open Internet Regulation

Guidelines for the implementation of the EU regulation on the open Internet, drawn up by the body of the European regulators for electronic communications, with the aim of maintaining net neutrality.

BGP hijacking

Malicious modification of the Border Gateway Protocol used by routers for addressing on the Internet.

CEO fraud

A scam that consists in tricking companies into transferring money by simulating false identities.

Contract for the web

An initiative launched in 2019 by the World Wide Web Foundation to combat political manipulation, fake news, and data breaches on the Internet.

Creative Commons License

Licenses with which copyright holders can protect the photos, music or other works they have created and release them to a limited extent for use and modification.

DDoS: Distributed Denial of Service

Overload of a server, which is caused by targeted simultaneous requests from numerous sources.

Defacing

Modification of a website without authorization.

DNS hijacking

Redirecting Internet users to a false, possibly harmful website.

E-Commerce Policy

Directive of the European Union on electronic commerce for the approximation of national legal systems on information society services.

E-government

Electronic handling of public administration processes.

eIDAS regulation

Europe-wide regulations for 'Electronic Identification' and 'Electronic Trust Services'. This creates uniform framework conditions for the cross-border use of electronic identification and trust services.

E-participation

Opportunities for the population to participate digitally in political processes.

European Data Protection Board

An independent body of the EU with the aim of ensuring the union-wide, uniform application of the data protection regulations and promoting cooperation between the data protection authorities in the member countries.

European Accessibility Act

The European law on accessibility is an EU directive that aims to improve the functioning of the internal market for accessible products and services, which are particularly important for people with disabilities.

European Dialogue on Internet Governance

A Europe-wide discussion platform that has existed since 2008 to deal with questions of Internet governance.

Fiber to the X

Term for broadband or transport networks that use fiber optic cables for their entire network or for part of the last mile of the network.

Freedom Online Coalition

A group of 32 governments working together to promote Internet freedom.

In-line deep packet inspection

Monitoring of data packets to filter unwanted content.

Internet Engineering Task Force

An open international cooperation platform for people who work in network technology, production, network operation, research and application, for the technical development of the Internet.

Internet Governance Forum

United Nations forum launched in 2006 to discuss topics relating to Internet governance.

Internet Society

International non-governmental organization founded in 1992 for the maintenance and further development of the infrastructure for the Internet.

Istanbul Convention

Council of Europe Convention on Preventing and Combating Violence against Women and Domestic Violence.

Massive open online courses

Online courses with no access restrictions for a large number of participants.

Over-The-Top services

Transmission of audio or video content over the Internet without the involvement of the Internet provider, i.e. decoupled from the providers of the infrastructure.

Phishing attack

A scam to steal passwords by sending misleading messages.

Ransomware attack

An attack that locks computers or encrypts data and demands a ransom to be released.

RIR system

An organization that regulates the registration of Internet number resources such as IP addresses in a region.

Ruggie principles

Guiding principles of the UN on the obligation of all companies to respect human rights. UN member states are obliged to implement the guidelines.

Inter-State Broadcasting Treaty

The regulatory authority for broadcasting in Germany lies with the federal states. With the Inter-State Treaty on Broadcasting and Telemedia (Rundfunkstaatsvertrag) they jointly laid down basic regulations for public and private broadcasting.

Spyware attack

An attack in which a mobile device is infected with software that collects information about the users of the device.

State trojans

A software from government institutions for searching computers.

‘Störerhaftung’

Co-liability for disturbances caused by third-party content. A German doctrine in media law developed through case law. In essence, it is about the extent to which people are liable for third-party content that they have not adopted.

TOR relay nodes

The TOR network (The Onion Routing) anonymizes the users’ connection data. Network participants make their capacities available and thus operate nodes that the network uses for the random forwarding of data.

Traffic shaping

Influencing network data transmission by delaying less important or less desirable traffic flows.

Annex 1:

List of Multi-stakeholder Advisory Board Members

Geraldine de Bastion, curator Konnektiv Kollektiv GmbH

Dr. Rudolf Gridl, Head of Division VI A 5 Internet Governance and International Digital Dialogue in the Federal Ministry for Economic Affairs and Energy

Dr. Regine Grienberger, Ambassador for Cyber Foreign Policy and Cyber Security Policy at the Federal Foreign Office (from October 2020)

Manuel Höferlin, Chairman of the Digital Agenda Committee of the German Bundestag

Daniel Holznagel, Official advisor at the Federal Ministry of Justice and Consumer Protection (June–October 2020)

Bettina Klingbeil, Head of Section 114 Ethics and Law; Framework conditions for digitalisation in the Federal Ministry of Education and Research

Professor Dr. Ulrike Klinger, Junior Professor for Media and Communication Studies at the Institute for Media and Communication Studies at the Free University of Berlin

Dr. Fruzsina Molnár-Gábo, spokeswoman for the Artificial Intelligence Working Group of the Junge Akademie at the Berlin-Brandenburg Academy of Sciences and the German Academy of Sciences Leopoldina

Annette Mühlberg, Head of the digitalisation project group at ver.di - United Service Union

Dr. Julia Pohle, Research Associate in the Research Group Politics of Digitization, Wissenschaftszentrum Berlin für Sozialforschung gGmbH

Tim Richter, Board Member Internet Governance Forum Deutschland e. V.

Dr. Tobias Schmid, Director of the State Media Authority in North Rhine-Westphalia

Julia Schuetze, project manager of 'International Cyber Security Policy' at the Stiftung Neue Zusammenarbeit e. V.

Oliver J. Süme, CEO of eco - Association of the Internet Industry e. V.

Wolfram von Heynitz, Head of the Cyber Foreign Policy Coordination Unit at the Federal Foreign Office (June–September 2020)

Annex 2:

List of participants in the national validation workshop on 5 November 2020

Geraldine de Bastion, curator Konnektiv Kollektiv GmbH

Professor Dr. Michael Baumann, Scientific Director of the Center for Advanced Internet Studies (CAIS) GmbH at the University of Bochum

Jutta Croll, Chair of the Board of Directors of the Digital Opportunities Foundation

Sara Diefenbach, Advisor, Federal Government Commissioner for Culture and the Media

Lisa Dittmer, Advisor Advocacy/Internet Freedom, Reporters Without Borders e. V.

Dr. Christoph Egle, Scientific Director, bidt - Bavarian Research Institute for Digital Transformation

Julia Göpel, Consultant, Unit 603-9 Multilateral Cultural Policy (EU, Council of Europe), UNESCO, Protection of Cultural Property, Return Issues, Federal Foreign Office

Dr. Rudolf Gridl, Head of Division VI A 5 Internet Governance and International Digital Dialogue in the Federal Ministry for Economic Affairs and Energy

Dr. Regine Grienberger, Ambassador for Cyber Foreign Policy and Cyber Security Policy at the Federal Foreign Office (from October 2020)

Joerg Heidrich, specialist lawyer for IT law; legal advisor and data protection officer at Heise Verlag; Member of the German Press Council

Sandra Hoferichter, Secretary General, European Dialogue on Internet Governance (EuroDIG)

Professor Dr. Wolfgang Kleinwächter, Professor Emeritus for Internet Policy and Regulation at Aarhus University

Bettina Klingbeil, Head of Section 114 Ethics and Law; Framework conditions for digitalisation in the Federal Ministry of Education and Research

Professor Dr. Ulrike Klinger, Junior Professor for Media and Communication Studies at the Institute for Media and Communication Studies at the Free University of Berlin

Professor Dr. Marianne Kneuer, professor of political science and board member of the Center for Digital Change at the University of Hildesheim

Professor Dr. Verena Metzke-Mangold, former President of the German Commission for UNESCO

Dr. Fruzsina Molnár-Gábo, spokeswoman for the Artificial Intelligence Working Group of the Junge Akademie at the Berlin-Brandenburg Academy of Sciences and the German National Academy of Sciences Leopoldina

Professor Dr. Christian Möller, Professor of Corporate Communication, Public Relations and Digital Marketing, University for Media, Communication and Economics (HMKW) Berlin

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Lena Nitsche, Project Manager Digital Sphere | Policy and Learning, Deutsche Welle

Philipp Otto, Managing Director of iRights.Lab GmbH

Chris Piallat, Network Policy Officer, Bundestag parliamentary group Bündnis 90/Die Grünen

Dr. Julia Pohle, Research Associate in the Research Group Politics of Digitalisation, Wissenschaftszentrum Berlin für Sozialforschung gGmbH

Tim Richter, Board Member, Internet Governance Forum Deutschland e. V.

Elisabeth Schauer mann, Advisor, Society for Computer Science, Youth IGF

Dr. Tobias Schmid, Director of the State Media Authority in North Rhine-Westphalia

Professor Dr. Wolf J. Schünemann, junior professor for political science with a focus on politics and the Internet, University of Hildesheim

Julia Schuetze, project manager of 'International Cyber Security Policy' at the Stiftung Neue Zusammenarbeit e. V.

Dr. Roland A. Stürz, Head of the Think Tank Department, bidt – Bavarian Research Institute for Digital Transformation

Oliver J. Süme, CEO of eco - Association of the Internet Industry e. V.

Dr. Thorsten Thiel, research group leader 'Digitalisation and Democracy' at the Weizenbaum Institute for the Networked Society

Dr. Helga Trüpel, former Member of the European Parliament

Franka Weckner, Youth IGD-D, law student, University of Heidelberg

Professor Dr. Thomas Wischmayer, Chair of Public Law and Law of Digitization, Bielefeld University

Annex 3:

The UNESCO Internet Universality Indicators: A Framework for Evaluating the Development of the Internet

► **21 contextual and 109 core indicators**⁶⁹⁰

Contextual indicators

► Economic indicators

1. A. Gross National Income (GNI) (purchasing power parity) per capita
The main source for this indicator is the data set on GNI maintained by the World Bank.
2. B. GNI growth rate over the past ten years
The main source for this indicator is the data set on GNI maintained by the World Bank.
3. C. Proportion of GDP attributable to services
The main source for this indicator is the sectoral distribution of GDP dataset maintained by the World Bank.

► Demographic indicators

4. A. Overall population size and growth trend
The main source for this indicator is the population size and growth trend data set maintained by the Population Division of the UN Department of Economic and Social Affairs.
5. B. Average life expectancy at birth disaggregated by sex
The main source for this indicator is the life expectancy at birth data set maintained by the World Health Organization (WHO). Life expectancy at birth data is also included in the Human Development Index (HDI).
6. C. Proportion of children, young people, people of working age and older people
The main source for this indicator is the population by age dataset maintained by the United Nations Department of Economic and Social Affairs.

⁶⁹⁰ The entire list of the indicators is available in: UNESCO, UNESCO's Internet Universality Indicators: A Framework for Assessing Internet Development (Paris: UNESCO, 2019).

7. **D. Linguistic diversity**

The main source for this indicator is the Linguistic Diversity Index (with country summaries) maintained by Ethnologue.

8. **E. Degree of urbanization**

The main source for this indicator is the urban and rural population size dataset maintained by the United Nations Department of Economic and Social Affairs.

► **Development indicators**

9. **A. UNDP Human Development Index (HDI)**

The proposed main source for this indicator is the HDI, which is produced by UNDP and published in its annual report on human development.

10. **B. Mean years of schooling and proportions of the corresponding age groups in primary, secondary and tertiary education, broken down by gender**

The main source for this indicator are data sets collected by the UNESCO Institute for Statistics. Data on the average school years are also included in the HDI.

11. **C. Adult literacy rate, disaggregated by sex (and language where appropriate)**

The main source for this indicator consists of data collected by the World Bank.

12. **D. Proportion of the population covered by the electricity supply**

The main source for this indicator is the World Bank's Sustainable Energy For All database.

► **Equality indicators**

13. **A. GINI coefficient**

The main source for this indicator is the Gini index created by the World Bank.

14. **B. Gender Inequality Index**

The main source for this indicator is the gender inequality index produced by the United Nations Development Programme.

► **Governance indicators**

15. **A. Global governance indicators**

The main source for this indicator are the six aggregated World Governance Indicators developed by the World Bank.

16. **B. Rule of Law Index**

The main source for this indicator is the Rule of Law Index developed by the World Justice Project.

17. **C. Doing Business Index**

The main source for this indicator is the doing business index created by the World Bank.

► **ICT development indicators**

18. **A. ICT Development Index**

The main source for this indicator is the ICT Development Index produced by the International Telecommunication Union (ITU). (Some of the indicators included in this index are included in Category A of this indicator framework).

19. B. Mobile Connectivity Index

The main source for this indicator is the Mobile Connectivity Index created by the GSMA Association. (Some of the indicators included in this index are included in Category A of this indicator framework).

20. C. World Economic Forum Network Readiness Index

The main source suggested for this indicator is the Network Readiness Index produced by the World Economic Forum. (Some of the indicators included in this index are included in Category A).

21. D. UNCTAD E-Commerce Index

The main suggested source for this indicator is the B2C (business to consumer) e-commerce index compiled by UNCTAD.

CATEGORY R:**Rights****A.1 Is there a legal framework for the validity and enforcement of human rights that is compatible with international and regional agreements, laws and standards as well as the rule of law?****▶ Indicator:**

22. The existence of a constitutional or legal framework, including control procedures, consistent with international and regional human rights conventions, laws and standards, and evidence that it is respected and enforced by government and other relevant authorities.

A.2 Is there a legal framework that recognizes that the same rights that people have offline must be protected online?**▶ Indicator:**

23. Evidence that the principle of online/offline equivalence is accepted and implemented in law and practice.

B.2 Are restrictions on freedom of expression clearly defined, transparent, and are they implemented in accordance with international agreements, laws and standards?**▶ Indicator:**

24. Legal restrictions on freedom of expression consistent with international and regional agreements, laws, and standards, and evidence that government and other competent authorities comply with them.

B.4 Under what conditions does the law make platforms and other providers of online services liable for content that is published or shared by users on them?**▶ Indicator:**

25. The legal framework for agent liability and the regulation of content is in line with international and regional agreements, laws and standards as well as evidence of the proportionality of implementation.

C.2 Does the government block or filter access to the Internet as a whole or to certain online services, applications or websites, and for what reasons and with what degree of transparency is this done?

▶ **Indicator:**

26. Legal framework for blocking or filtering Internet access, including transparency and oversight regulations.
27. Evidence in government and court decisions and from other credible and authoritative sources regarding blocking or filtering of access.
28. Occurrence, type and basis for shutdowns or other restrictions in Internet connectivity.
29. The number and trend of content restrictions, domain name withdrawals and other interventions over the past three years.

C.4 Will individuals, media workers or other online/media professionals be arbitrarily arrested, prosecuted or intimidated for accessing information online?

▶ **Indicator:**

30. Scope and type of legal provisions and practice.
31. Number of arbitrary arrests and prosecutions for access to content that is not unlawful under international agreements on the circumstances and criteria for allowable restrictions.

D.2 Can non-governmental organizations organise themselves freely online?

▶ **Indicator:**

32. Proof of an online organization and no undue interference in such an organization.

D.3 Are there government guidelines for e-government and/or e-participation that encourage participation in government and public processes?

▶ **Indicator:**

33. Existence of government policies for e-government and e-participation, including the use of the Internet for public consultations.
34. Values/rankings in the UNDESA e-participation index.

E.2 Is the protection of personal data vis-à-vis governments, companies and other organizations guaranteed by law and enforced, including the right of access to the information available and the right to redress?

▶ **Indicator:**

35. Legal framework for data protection, including oversight mechanisms and remedies, and evidence that it is respected and enforced by government and other relevant authorities.
36. Legal framework for commercial uses of personal data and international data transfer/security, including monitoring mechanisms and legal remedies.
37. Existence and powers of an independent data protection authority or similar body.

E.3 Are the powers of the law enforcement agency and other authorities to lawfully intercept user data necessary, proportionate and limited to circumstances consistent with international and regional agreements, laws and standards?

▶ **Indicator:**

38. Legal framework for lawful data interception, including independent oversight and transparency, and evidence of implementation by government and other competent authorities.

Q.1 Does government policy include the Internet in employment, health and education policies, with particular reference to the rights of the International Covenant on Economic, Social and Cultural Rights (ICESCR)?

▶ **Indicator:**

39. Evidence of the inclusion of a) the Internet and b) respect for IPWSK rights in sector-specific strategies for employment, health and education.
40. Evidence Supporting Government Analysis of the Impact of the Internet on Employment, Health and Education.

Q.2 Are the population and other individuals equally able to use the Internet to participate in cultural activities?

▶ **Indicator:**

41. Extent and type of differences in Internet access and Internet use between different communities/ ethnic groups.
42. Existence of government policy on cultural heritage online.
43. Constitutional or legal guarantee of freedom of artistic expression.

CATEGORY O:

Openness

A.2 Does the legal and regulatory framework facilitate innovation on the Internet for business, academia and civil society?

▶ **Indicator:**

44. Evidence of the adequacy of the legal and regulatory framework for establishing new businesses and innovation by science and civil society.
45. Perceiving business experiences with the business regulatory environment and ICT, including Internet based businesses.

B.3 Does the government promote the diversity of intellectual property licensing options, including free and open source software (FOSS)?

▶ **Indicator:**

46. Government Policy Towards FOSS and Other Licensing Options.
47. Extent to which government software is used with various license options.

B.4 Does the government promote and adopt standards to make it easier for people with disabilities to access the Internet and e-government services?

▶ **Indicator:**

48. Government policies and practices to ensure accessibility for people with disabilities.
49. Perceptions of people with disabilities regarding accessibility policies and practices.

C.1 Is there an independent regulation of the communication markets in accordance with international norms and standards?

▶ **Indicator:**

50. Presence of an independent regulatory authority.

51. Evidence of regulatory performance, including the perception of the quality of regulation by communications companies, consumer groups, and other organizations.

C.4 Is there sufficiently effective competition in communication access networks to protect the interests of consumers?

▶ **Indicator:**

52. Number of stationary and mobile broadband providers.
53. Market shares of stationary and mobile broadband providers.

D.4 Does the government promote the use of open educational resources (OER) and facilitate open access to academic and scientific resources?

▶ **Indicator:**

54. Educational policy framework regarding OER.
55. Regulations for access to academic and scientific resources for higher education institutions and students.

D.5 Does the government require Internet service providers to manage network traffic transparently, impartially and neutrally without discriminating against certain types of content or content from certain sources?

▶ **Indicator:**

56. Regulatory agreements and practice related to net neutrality and competition for online and network services.

E.1 Have laws been passed requiring open access to public and publicly funded data with adequate privacy protection, and are these laws being implemented?

▶ **Indicator:**

57. Existence of a legal framework for access to open data that is in line with international standards and privacy requirements.
58. Evidence of the extent to which open data sources are available and used online.

E.2 Do government departments and local government agencies have websites that are available in all official languages and with all major browsers?

▶ **Indicator:**

59. Government policy to ensure the provision of websites in the appropriate language and with appropriate browser access and evidence of effective implementation.
60. Share of government services with websites (value/ranking in the UNDESA online services index).

CATEGORY A:

Accessibility for all

A.1 Is statistical information on Internet access and use regularly collected on a systematic basis by the national statistical systems or other competent authorities?

▶ **Indicator:**

61. Arrangements for the collection of aggregated and disaggregated statistical information from various sources, including the inclusion of relevant questions in household surveys.

62. Availability of independent household surveys and other evidence of aggregated Internet access and Internet usage.

A.4 Does the government have a policy and programme in place to implement universal access to reliable, affordable broadband, and is it being effectively implemented?

► **Indicator:**

63. Adopt a strategy for universal access and demonstrate effective use of resources.
64. Statistical evidence of progress on the way to universal access, aggregated and disaggregated with special consideration, for example, of gender, age, place of residence, ethnicity and disability.

B.1 What proportion of the population uses the Internet, with what frequency, and is this share growing?

► **Indicator:**

65. Percentage of people who have ever had access to the Internet, aggregated and disaggregated.
66. Share of households with Internet access.
67. Number of Internet users per hundred people, aggregated and disaggregated, according to frequency of use.
68. Number of social media (social networks, microblogs, messaging, user-generated video streaming) users per hundred people, aggregated and disaggregated.
69. Number of visits to social media websites (as defined above) per hundred people.

B.3 What proportion of the population subscribes to communications/broadband services and is this share increasing?

► **Indicator:**

70. Percentage of people who own a mobile phone, aggregated and disaggregated.
71. Number of stationary broadband subscriptions per hundred people, aggregated and disaggregated.
72. Number of individual active mobile broadband subscribers per hundred people, by bandwidth, aggregated and disaggregated.

B.4 Which access barriers are identified by users and non-users of the Internet?

► **Indicator:**

73. Perceptions (of users and non-users) of barriers to their Internet access and Internet use, aggregated and disaggregated, from household surveys and/or other sources.

C.1 Are mobile phones with Internet connectivity affordable for all population groups?

► **Indicator:**

74. Costs for a) entry-level mobile phones and b) smartphones as a percentage of the monthly GNI per capita.
75. Perception of affordability by users and non-users, aggregated and disaggregated.

C.2 Is broadband access and use affordable for all population groups?

► Indicator:

76. Monthly costs for a stationary entry-level broadband connection and usage as a percentage of the monthly GNI per capita.
77. Monthly costs for an entry-level mobile broadband connection and its usage as a percentage of the monthly GNI per capita.
78. Availability or unavailability of free or low cost access.

D.1 Are there significant differences in broadband access and use between regions and between urban and rural areas?

► Indicator:

79. Geographic coverage of broadband networks in urban and rural areas, by bandwidth level.
80. Number of mobile broadband subscribers and Internet users, aggregated and, if possible, broken down by urban and rural areas and in different regions.

D.5 Do adults in all age groups use the Internet equally?

► Indicator:

81. Proportion of adults in different age groups using the Internet, as well as frequency and type of use, including a breakdown by gender.
82. Perception of the barriers to Internet access and Internet use as well as the value of Internet access and use for users (if available), broken down by age and gender.

E.1 How many Internet domains and servers are there in the country?

► Indicator:

83. Number of registered domains (including ccTLDs, gTLDs and IDNccTLDs) per thousand people and, if available, trend
84. Number of secure web servers per million people and trend, if available.

E.4 Is there a significant and growing volume of Internet content in various local and indigenous languages, including locally generated content?

► Indicator:

85. Proportion of the population whose primary language and script are available on leading online services.
86. Availability of content on government websites in all languages with significant user groups within the population.

F.1 Do school and university curricula include training in ICT, media and information literacy aimed at effective and secure use, and are these curricula implemented in practice?

► Indicator:

87. Policy on school curricula, including media and information literacy, intercultural dialogue and training in ICT skills.
88. Proof of suitable educational curricula at primary, secondary and tertiary level.
89. Proportion of teachers in primary and secondary schools with training in ICT or the use of ICT in the classroom.

- 90. Proportion of schools with Internet access.
- 91. Proportion of learners who have access to the Internet in school.

F.3 What proportion of the population and the workforce is skilled in using ICT?

▶ **Indicator:**

- 92. Proportion of Internet users with special Internet knowledge, according to type of qualification (basic, intermediate and advanced knowledge), aggregated and disaggregated.
- 93. Proportion of workers using ICT in the workplace, by type of skill (basic, intermediate, advanced), aggregated and disaggregated.
- 94. Proportion of tertiary students who have taken STEM and ICT courses, broken down by gender, compared to global averages.

CATEGORY M:

Multi-stakeholder participation

A.1 Is there a general policy, legal and regulatory framework for Internet development and policy-making that is consistent with international standards?

▶ **Indicator:**

- 95. Presence of an overall framework consistent with relevant international standards.
- 96. Existence of legal and regulatory frameworks that enable electronic commerce, digital signatures, cybersecurity, data protection and consumer protection.

B.2 Does the government actively involve other stakeholders in the development of national Internet guidelines and laws?

▶ **Indicator:**

- 97. Provision for multi-stakeholder consultation and participation in national institutions and policy-making processes dealing with the development and use of the Internet.
- 98. Number of actively participating non-governmental stakeholders, by stakeholder group, broken down by gender.

B.3 Is there a national Internet governance forum and/or another multi-stakeholder forum that is open to all stakeholders and in which various stakeholder groups actively participate?

▶ **Indicator:**

- 99. Existence of a national IGF and/or other multi-stakeholder forum dealing with Internet governance.
- 100. Participation data for national IGF or other forums, aggregated and disaggregated by gender and stakeholder group, with special consideration of the participation of selected groups (e.g. ministries of education, SMEs, NGOs dealing with children, trade unions), including arrangements for remote participation.

C.2 Do the government and other stakeholders from the country actively participate in major international forums dealing with ICT and the Internet?

▶ **Indicator:**

- 101. Number of participants from different stakeholder groups taking part in global and regional IGFs, per million people, aggregated and disaggregated by stakeholder group and gender.

102. Participation of non-state actors in official ITU delegations, aggregated and broken down by interest group and gender.

C.3 Are the government and other stakeholders actively involved in ICANN?

▶ **Indicator:**

103. Membership and active participation in the ICANN Advisory Committee on Government Affairs (GAC).
104. Membership in and active participation in ICANN constituencies, working groups and other forums.

CATEGORY X:

Cross-cutting indicators

A.1 Are the interests and needs of women and girls explicitly taken into account and effectively monitored in national strategies and guidelines for the development of the Internet?

▶ **Indicator:**

105. The national strategies explicitly take into account a) the needs of women in relation to the Internet and b) the potential of the Internet to support women's self-determination and gender equality.
106. Number of women and men in leadership positions in government dealing with ICT/Internet.
107. Extent of disaggregation of available data on ICT access and use by gender.
108. National mechanisms in place to monitor the inclusion of women in Internet access and use strategies.

A.2 Is there a digital gender gap in Internet access and use, and if so, is this gender gap growing, stabilizing, or narrowing?

▶ **Indicator:**

109. Proportion of people using the Internet, broken down by gender, compared to the gender differences in income and educational level.
110. Proportion of adult women and men with mobile broadband subscriptions, broken down by gender, compared to the gender-specific differences in income and educational level.
111. Survey data on Internet awareness and patterns of Internet use, disaggregated by gender.
112. Perception of the barriers to access to the Internet and its use as well as the value of Internet access and Internet use, broken down by gender.

A.5 Do the law, law enforcement and judicial processes protect women and girls from gender-based harassment and violence online?

▶ **Indicator:**

113. Existence of a relevant legal framework and judicial process.
114. Incidence of gender-based harassment and violence online experienced by women and girls.
115. Evidence of government, law enforcement and judicial action to protect women from gender-based harassment and online violence.
116. Presence of online services to protect women from gender-specific online harassment or to support those affected.

B.3 How do children perceive the Internet and how do they use it?**► Indicator:**

- 117. Perceptions of the Internet among children derived from surveys, including usage barriers, usage value and usage anxiety, aggregated and disaggregated.
- 118. Data on the use of the Internet by children, aggregated and disaggregated, compared to other age groups (e.g. data on location, frequency and type of use).

B.4 Is there a legal and policy framework to promote and protect children's interests online, and is it implemented effectively?**► Indicator:**

- 119. Existence of a political framework and legal safeguards compatible with the UN Convention on the Rights of the Child (CRC) and evidence that these are implemented by the government and other relevant authorities.

C.1 Do national and sectoral development policies and strategies for sustainable development effectively incorporate ICT, broadband and the Internet?**► Indicator:**

- 120. The existence of a recent, comprehensive policy for the development of ICT, broadband and the Internet, including reflection on the likely future developments in these areas.

C.7 What proportion of businesses, including small and medium-sized enterprises, use the Internet and e-commerce?**► Indicator:**

- 121. Share of SMEs using the Internet by type of access.
- 122. Perception of the value of Internet use by SMEs.

D.1 Is there a national cybersecurity strategy based on international human rights standards, including a national computer emergency response team (CERT) or equivalent?**► Indicator:**

- 123. There is a multi-stakeholder cybersecurity strategy that is consistent with international law and norms.
- 124. Establishment of a national CERT or equivalent system and evidence of its effectiveness.

D.4 Have there been significant cybersecurity violations in the country in the past three years?**► Indicator:**

- 125. Frequency and type of reported violations and the number of individuals and companies affected.
- 126. Perception of Internet security among users, companies and other interest groups.
- 127. Data on phishing, spam and bots in domains at national level.

E.3 How do individuals perceive the benefits, risks and effects of the Internet within the country?**► Indicator:**

- 128. Perceptions of the benefits, risks and effects of the Internet, derived from household or opinion polls, broken down by gender.

E.4 Do Internet users report that they are being harassed or abused to a significant extent by other Internet users, which prevents them from making full use of the Internet?

► **Indicator:**

129. Availability of reporting mechanisms for online harassment or abuse, including reporting arrangements by online service providers.
130. Data on the extent to which Internet users report harassment or abuse, with particular reference to certain demographic and social groups (including women, ethnic and other minorities, and people who advocate for people's rights).

ASSESSING INTERNET DEVELOPMENT IN GERMANY

Using UNESCO's Internet Universality ROAM-X Indicators

"The report shows the universal relevance of the ROAM-X principles and indicators to all countries in the Global North and South and sets a model for similar assessments in other countries, in Europe and beyond. It demonstrates Germany's commitment to promoting the ROAM-X principles in its national digital environment, and its pioneering spirit in contributing to how Internet Governance and digital transformation processes are shaped around the world. In addition, this report could pave the way towards an in-depth reflection on existing Internet-related approaches and policies in the country and abroad.

In light of the rapidly evolving digital knowledge societies and building on lessons learned through the pandemic, it will be important to measure in due course the impact of this inclusive assessment process and of the implementation of the recommendations. Beyond the value of this exemplary situational snapshot, renewing and updating the assessment enables decision-makers to identify trends within the country, and monitor the results of changes to the Internet policies and uses initiated by this assessment process and publication."

Professor Dr. Tawfik Jelassi

Assistant Director-General for Communication and Information
UNESCO

"The Federal Foreign Office and I, in my capacity as the Ambassador for Cyber Foreign Policy and Cyber Security, support the United Nations and UNESCO and their ROAM-X indicators in shaping Internet policy. I was therefore very happy to act as Chair of the Multistakeholder Advisory Board providing support for the application of the UNESCO Internet Universality Indicators in Germany. This report on their application is a milestone for shaping digitalisation in a way that promotes equal opportunities in Germany.

Developments can only constitute positive progress if the digital transformation is at the heart of society, organised so as to provide equal opportunities and accepted by all. Everyone should be able to equally share the opportunities of digitalisation. To this end we want to establish the framework for this - nationally, in Europe and globally.

We all rely on a common, open, free and secure Internet that is accessible to everyone and is people-centred. These are the same goals that the United Nations and UNESCO aspire to with their ROAM-X indicators. We would like to play a part in ensuring that this remains so for Germany and our partners around the world."

Dr. Regine Grienberger

Ambassador for Cyber Foreign Policy and Cyber Security
Federal Foreign Office

