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SHAPING THE FUTURE.

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Achieving a gender-equitable
digital transformation

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CONTENTS

„THE DIGITAL TRANSFORMA-TION MUST OPEN UP NEW OPPORTUNITIES FOR WOMEN – SO THAT EVERYONE CAN BENEFIT.“

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Committee head "Digital transformation and its impact on the lives on women" and board member of the Deutscher Frauen-rat (2017 – 2019)*

* The Deutscher Frauenrat (National Council of German Women's Organizations) ist the largest lobby for womens rights and gender equality in Germany.

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INTRODUCTION

The digital transformation is well underway in all areas of life. It is already having a significant impact on our society's economic, political, social and cultural frameworks. Yet the political efforts necessary to help shape the transformation are failing to keep up with these developments. The digital transformation presents women with new opportunities and challenges that have barely been the subject of public debate to date. The term "digital gender gap" refers to the gaping divide between men and women in terms of their access to and usage of digital technologies, and to the different degrees of visibility of women and men in digital media and digital spaces. Overcoming gender inequalities in the digital transformation and making it a success for everyone requires the appropriate political conditions to be put in place. This is the only way to ensure that women are actively involved in shaping the digital transformation and are able to benefit from it.

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The digital transformation presents women with new opportunities and challenges that have barely been the subject of public debate to date.

From 2017 to 2019, the expert committee for "The Digital Transformation and its Impact on the Lives of Women" worked to throw light on this topic from the perspective of women, and to establish women's interests as a cross-cutting topic in the political shaping of the digital transformation. The committee's members and experts concluded that the following topic areas are particularly important for furthering the interests of women:
/// Education 4.0
/// Work 4.0
/// Communication in digital spaces

Education 4.0

Education is both a prerequisite and a tool for actively shaping the digital transformation, which is proceeding at a rapid pace. It is becoming obvious that a divide between the sexes exists in this area, to the disadvantage of women and girls.[1] Clear education policy goals and agreements are necessary in schools, vocational training and academic education in order to allow women and girls to properly participate in digital knowledge and digital developments.

The terms "digitalization" and "the digital transformation" are now an inherent part of any discussion about education. Key actors in our education system repeatedly emphasize the significance of digital skills for everyone – children, teenagers, and adults of all ages. The strategies and reports of the Federal Ministry of Education

1 *OECD (2018). Bridging the Digital Gender Divide: Include, Upskill, Innovate. http://www.oecd.org/internet/bridging-the-digital-gender-divide.pdf (accessed on 23 Apr. 2019)*

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Key actors in our education system repeatedly emphasize the significance of digital skills for everyone – children, teenagers, and adults of all ages.

and Research, the Bundestag's Committee on Education, Research and Technology Assessment, and the Standing Conference of the Ministers of Education and Cultural Affairs state that integrating the digital transformation into our education system's teaching and learning processes is an important and complex matter.[234] However, while there is clearly widespread recognition that women and girls do not yet equally benefit from these processes, that fact receives little attention in the strategy papers of the federal and state governments.

2 *Federal Ministry of Education and Research (2016). Bildungsoffensive für die digitale Wissensgesellschaft. Strategie des Bundesministeriums für Bildung und Forschung, https://www.bmbf.de/files/Bildungsoffensive_fuer_die_digitale_Wissensgesellschaft.pdf (accessed on 12 Apr. 2019)*
3 *Federal Ministry of Education and Research (2017). Digitale Innovationen. Neue Dimensionen von Bildung und Wissenschaft erschließen, https://www.bildung-forschung.digital/files/171017_Abschlussbericht_Plattform_Digitalisierung%20in%20Bildung%20und%20Wissenschaft.pdf (accessed on 12 Apr. 2019)*
4 *Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany (2016). Bildung in der digitalen Welt. Strategie der Kultusministerkonferenz, https://www.kmk.org/fileadmin/Dateien/pdf/PresseUndAktuelles/2018/Digitalstrategie_2017_mit_Weiterbildung.pdf (accessed on 12 Apr. 2019)*

Work 4.0

The digital transformation is having a major impact on the world of work. At the labour market level it has an immediate effect on employment prospects and circumstances, and at the company level it influences actual working conditions. The unequal division of labour between the sexes when it comes to gainful employment versus care and domestic work, and the differences in the distribution of men and women across sectors, professions and occupations also mean that the digital transformation affects male and female workers differently. Social discourse on the future of labour and the resulting potential for human labour to be substituted by machines is usually limited to male-dominated technical fields that are easily automated – such as the automotive industry, mechanical engineering, and logistics. However, many occupational fields with large proportions of female workers, e.g. administration and retail, also have a high potential for substitution.[5] To ensure that women can participate equally in the (digital) labour market, the digital transformation of this social sphere must be shaped in a gender-equitable way. However, the necessary knowledge is not being produced to enable a gender-sensitive approach to tackling the imminent changes in the world of work and the labour market of the future.

5 *Dengler, K., Matthes, B. (2018). Wenige Berufsbilder halten mit der Digitalisierung Schritt. IAB, http://doku.iab.de/kurzber/2018/kb0418.pdf (accessed on 12 Apr. 2019)*

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Although women are more active users of social media than men, they are still less visible and contribute less to the generation of online content.

Communication in digital spaces

For many years now, most of our communication has been taking place within digital spaces. Social networks such as Facebook, Instagram and Twitter have become the primary platforms for sharing information. Digital communication offers women the opportunity to draw attention to themselves and the issues that matter to them. Since political will is increasingly being formed through communication, campaigns and civil-society initiatives online, it is vital that women participate in this digital public discourse. But online communication is not gender neutral, meaning there is a risk that existing gender stereotypes will be replicated.
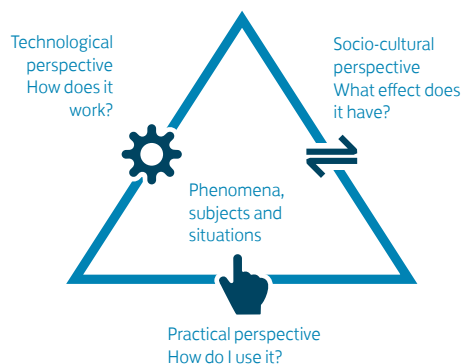
Although women are more active users of social media than men, they are still less visible and contribute less to the generation of online content. Violence against women and girls is also a major obstacle to equal participation in digital communication. A paper published in 2017 by

the European Institute for Gender Equality (EIGE) confirms that women are disproportionately affected by online violence.[6]

Digital transformation

The following diagram shows how the digital transformation must address the technological perspective, the practical perspective, and the social and cultural impact. In so doing, it must also consider gender equality.

Digitally networked world

Technological perspective
How does it work?

Socio-cultural perspective
What effect does it have?

Phenomena, subjects and situations

Practical perspective
How do I use it?

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Diagram: Perspectives on the digitally networked world (Cf. Dagstuhl declaration of the Gesellschaft für Informatik)[7]

What the topic areas presented in this paper – Education 4.0, Work 4.0, and Communication in digital spaces – have in common is the increasing relevance of algorithms and artificial intelligence. The continuing use of digital technologies in all areas of life means that the algorithms (processing instructions) these require are increasingly influencing everyday life. Because the algorithms are so potent, we must ensure that they comply with minimum standards and that they cannot discriminate on the basis of gender in any way. Similar gender-equitable requirements must be placed on artificial intelligence (AI) systems, as their particular algorithms and rules have the ability to learn, to handle uncertainty and incomplete information, and to independently develop new strategies for solving problems. Because of this complexity, the development of AI must receive a high degree of attention so as to prevent or remove any discrimination on the basis of gender. The National Council of German Women's Organizations makes the following demands of the German federal government to ensure the gender-equitable use and design of the new technologies and their impact on education, work and communication in the digital transformation.

DIGITALIZATION

Digitalization, in the narrow sense, means converting analogue content or processes into a digital form or function[8] (e.g. vinyl records to CDs, letters to e-mail).

Digital transformation is a more comprehensive term that describes general changes brought about by digital technology in personal, social, economic and political life.[9]

The **digital gender gap** is the divide between men and women in terms of their access to and use of digital technologies.

The use of digital technologies is increasingly leading to the use of **algorithms (processing instructions)** that influence our everyday life – for instance in granting loans or college places, preselecting job applicants, supporting medical diagnostic processes, or engaging in preventive police work.[10]

Artificial intelligence (AI) systems feature special algorithms and rules that are able to learn and handle uncertainty and incomplete information.

6 *European Institute for Gender Equality (2017). Cyber violence against women and girls, https://eige.europa.eu/rdc/eige-publications/cyber-violence-against-women-and-girls (accessed on 12 Mar. 2019)*

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The demands of the National Council of German Women's Organizations

/// Algorithms and AI applications must be designed in such a way that any discrimination towards women in all their diversity is ruled out. This must be verifiable.

/// Women's perspectives must be equally included at every stage of development for algorithms and AI applications.

/// Research must be promoted to identify gender biases and intersectional discrimination caused by the use of algorithms and AI. The findings must be used to formulate consistent guidelines for gender-equitable development and use that recognize and reach women in all their diversity.

/// The federal government must call upon companies to guarantee the ethically responsible and anti-discriminatory design and use of algorithms.

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EDUCATION 4.0

Education plays a key role in the digital transformation process. Education is a prerequisite, a necessity, and a tool for actively shaping the transformation. Education addresses all social groups and genders, all life phases and all educational paths – from early-childhood education to all professional and academic training pathways – and also encompasses lifelong learning.

Education 4.0 is expected to create a strong knowledge society, to enable girls and boys, women and men to participate in that knowledge society, and to make a sustainable contribution to economic prosperity and a strong democracy. Yet, in education, specific requirements for girls and women must be met in order to avoid exacerbating existing gender inequalities and to remove deficits affecting women.

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Education is a prerequisite, a necessity, and a tool for actively shaping the transformation.
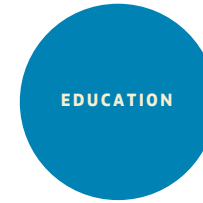
EDUCATION

Education 4.0 describes an interdisciplinary educational concept within a digitally networked world that addresses technological, practical and socio-cultural perspectives and focuses on technological, practical, social, cultural and ethical competences.

Digital competence is crucial when using any form of digital technology. It is the ability to confidently and critically handle the digital technologies used to communicate, find information, and solve problems in all areas of life.[11]

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Countering the digital divide between women and men requires educators to have specialist knowledge of the relationship between digitalization and gender.

11 *School Education Gateway. Digital competence: the vital 21st-century skill for teachers and students, https://www.schooleducationgateway.eu/de/pub/resources/tutorials/digital-competence-the-vital-.htm (accessed on 3 May 2019)*

EARLY CHILDHOOD AND SCHOOL EDUCATION

Gender stereotypes become established very early in life, with children exposed to them within their immediate family environment. Girls and boys are ascribed different abilities and strengths. To counter this, educational goals and concepts must be defined for preschools that foster the natural curiosity of young children and prevent the formation and manifestation of gender-role stereotypes. This includes giving children age-appropriate instruction in using digital technologies, since they are exposed to these from a very early age.

Shaping the digitalization process within our education system is the shared responsibility of many different actors. With its "DigitalPakt Schule" programme, the federal government will support the development of a comprehensive, effective digital learning infrastructure. At the same time, the German state governments (Länder) will provide for the educational content through pedagogical concepts (digitalization concepts). An enhanced focus on teaching mathematics, science and IT skills is a prerequisite for helping school pupils to understand complex technical and technological relationships and to actively participate in all areas of knowledge. If we are to achieve a gender-equitable education system, it is essential that teaching staff are properly trained. Countering the digital divide between women and men requires educators to have specialist knowledge of the relationship between digitalization and gender. Yet the additional funding round of the Federal Ministry

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for Education and Research's "Qualitätsoffensive Lehrerbildung" programme, which begins in 2020 and focuses on "digitalization in teacher training" and "teacher training for vocational schools", places no emphasis on the topic of gender.[12]

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Educational goals and concepts must be defined for preschools that foster the natural curiosity of young children and prevent the formation and manifestation of gender-role stereotypes.

The demands of the National Council of German Women's Organizations

/// Access to digital knowledge must be assured for all children, teenagers and young people, in particular girls. They should be encouraged to acquire comprehensive digital competences, as these will influence the future course of their lives – their choice of profession, career path, and financial independence.

/// Educational digitalization concepts must be designed to include the gender perspective as an integral part.

/// The German states' existing approval procedures for teaching and learning aids must ensure that all teaching materials are gender equitable.

/// Teaching of mathematics, science and IT must include the aim of better realizing the potential of all girls in STEM subjects (science, technology, engineering and mathematics).

/// The topic of digitalization and gender must be integrated into teacher training and further training, and into the education and training of childcare workers.

/// In schools, gender-sensitive university and careers advice must be provided throughout multiple school years in order to counter gender-specific and intersectional stereotypes when choosing a profession. To achieve this, an appropriate range of external trainers will be required.

/// To professionalize learning infra-structures, schools must employ specialist IT officers who can give teaching staff technical support according to their specializations. This will allow teachers to focus on their educational tasks and provide all girls and boys with equally high-quality instruction in all subjects, incorporating the use of digital technologies.

VOCATIONAL TRAINING

Gender stereotypes influence educational pathways, which in their turn determine social status and economic participation. The digital transformation offers an opportunity to change the way occupational profiles, everyday working life, and vocational school interact – in all occupational areas. Extensive cross-sector digital and technical skills will be required in all occupations in the near future. Therefore, the gender perspective must be considered in the planning and design of knowledge transfer and knowledge acquisition in vocational training.

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The digital transformation offers an opportunity to change the way occupational profiles, everyday working life, and vocational school interact – in all occupational areas.

12 *Federal Ministry of Justice and Consumer Protection (ed.) (2018). Richtlinie zur Förderung von Projekten in der„-Qualitätsoffensive Lehrerbildung" mit den Schwerpunkten „Digitalisierung in der Lehrerbildung" und/oder „Lehrerbil-dung für die beruflichen Schulen, Bundesanzeiger. BAnz AT 19 Nov. 2018 B4 https://www.qualitaetsoffensive-leh-rerbildung.de/files/BMBF-F%c3%b6rderlinie_Digitalisie-rung-BeruflicheBildung.pdf (accessed on 28 Apr. 2019)*

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The demands of the National Council of German Women's Organizations

/// Careers advice services must, across all relevant structures, be designed in a gender-sensitive way with regard to jobs, professions and requirements in the context of digitalization. These must be regularly reviewed and updated, and must be fully accessible.

/// In the course of further digital developments, vocational training measures must be designed in an unbiased, gender-sensitive way with regard to jobs, professions, skills and opportunities.

/// Job profiles must avoid gender stereotypes. For vocational schools and within the dual training system, digital skills must be stated whatever the sector.

/// Girls and women must be targeted directly to attract them to vocational training in STEM professions.

/// Training conditions in STEM professions must be scrutinized to check whether they are different for girls and women than for boys and men, in order to ensure that female trainees do not suffer discrimination.

/// The gender-equality perspective must be considered in inter-company vocational training and must be integrated in, for example, the special programme "Förderung von Digitalisierung in überbetrieblichen Berufsbildungsstätten" (Promoting digitalization at inter-company vocational training facilities).

ACADEMIC EDUCATION

Digitalization and the digital transformation essentially affect all study courses, from the humanities and the social sciences to engineering and IT itself, and they influence all academic teaching institutions. In order to increase the currently low number of female students studying STEM subjects, we must heighten young women's general interest in these areas and strengthen their skills and competences. In addition, digitalization in teaching can be used to adapt university studies by enabling flexible formats that fit individual life plans.

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The demands of the National Council of German Women's Organizations

/// Academic institutions should regularly review the study courses they offer. Such reviews should establish whether the study and qualification objectives need to be adapted with regard to gender equality and the digital transformation; what the consequences will be for individual occupations; what competences need to be taught for managing the digital transformation at the technical, organizational and social levels; and whether changes should therefore be made to the study programmes or entirely new study programmes created.

/// The curricula in all study programmes must be supplemented with the necessary teaching content relating to the digital transformation. Given the rapid pace of change, the curricula will have to be frequently reviewed, reworked and developed further.

/// Welcome weeks at universities and in STEM-orientation study programmes must pay more attention to women's perspectives.

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/// University committees and working groups that address digitalization and the digital transformation must be staffed with roughly equal numbers of men and women.

/// University teachers and lecturers must continuously inform themselves about the latest developments in digitalization and the digital transformation in their subject areas, including from an intersectional gender perspective.

/// Within academic education, flexible access and individualized study programmes must be promoted so that students can reconcile family life and studies. Access to teaching can be improved through, for example, blended learning (a combination of online study and face-to-face teaching on campus).

CONTINUING EDUCATION AND LIFE-LONG LEARNING

Continuing education offered by public bodies is governed by few legal requirements with regard to teacher qualifications, examination requirements, diplomas offered, and curricula. At the same time, digitalization and the digital transformation are making it even more necessary for individuals to engage in lifelong learning, and for continuing education to be included in educational pathways.

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At the same time, digitalization and the digital transformation are making it even more necessary for individuals to engage in lifelong learning.

The demands of the National Council of German Women's Organizations

/// Lifelong learning must be politically upgraded (including as far as women are concerned).

/// Public education programmes must develop concepts and initiatives for women in every phase of life and in all their diversity – including women re-entering the work force. Moreover, courses should be offered that facilitate access to digital technologies and thus foster participation in digital developments by enabling participants to use and shape these technologies.

/// A nationwide regulation allowing employees to take educational sabbaticals must be introduced so that women have a binding instrument to assert their right to continuing education and lifelong learning.

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WORK 4.0

The digital transformation is bringing about immense changes in the world of work, with direct consequences for workers.[13] The advent of the digital era is altering the realities of working life across all sectors, jobs and professions. Politics and business now have the key task of ensuring that everyone can participate in decent gainful employment, which means exploiting the potential of digitalization and minimizing its risks. After all, the digital transformation is a process that humans are responsible for, and as such it can be shaped by politics.

At the labour market level, the effects of the digital transformation on horizontal and vertical segregation in the labour market must be discussed to a greater degree from a women's perspective in the debates surrounding Work 4.0 and the future of work. At the company level, gender discrimination must be the focus. The same applies for the challenges arising as a result of digitally driven changes to employment conditions.

13 *Welpe, Brosi & Schwarzmüller (2018). Digital Work Design: Die Big Five für Arbeit, Führung und Organisation im digitalen Zeitalter. Campus: Frankfurt, New York.*

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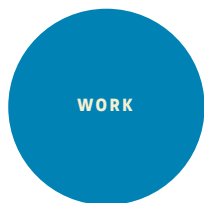
WORK

According to the Federal Ministry of Labour and Social Affairs, **Work 4.0** picks up on the current discussion about the **fourth industrial revolution** and puts forms of work and employment relationships centre stage. Work 4.0 will be more networked, more digital and more flexible.[14] The work of the future will depend primarily on how society views this technological development.

Discussions about the **work of the future** focus primarily on the opportunities and risks that are emerging and could emerge with the increasing digitalization of work processes and human-machine interactions, and with the resultant new forms of work, social security systems, occupations, and labour market developments. This topic also includes the question of how we can ensure a gender-equitable world of work.

EMPLOYMENT PROSPECTS

In Germany, the labour market remains strongly segregated between the sexes. Thus, the digital transformation affects women differently than men. Female-dominated roles, such as those in retail and administrative sectors, have a high potential for substitution, meaning they could be performed by computers in the future.[15] On the other hand, employment prospects in the personal services sector remain secure as a result of demographic change and increased demand for nursing care and childcare. At the same time, STEM professions are expected to offer positive employment and income prospects as a result of the digital transformation. Despite many efforts to address the problem, women remain under-represented in these professions. In order to prevent the segregation worsening – or even to overcome it – the digitalization process must be designed with gender equality in mind.

New work structures are being created through the rise of digital platforms. These platforms enable "analogue" services such as domestic services to be offered more efficiently, more flexibly, and in a more targeted manner. They also make it possible to award digital contracts, with crowdworking being one example. What these new forms of work have in common is that the people providing the services earn a low, unpredictable income and are forced into an employment situation where they have no social security, or into precarious self-employment. Currently, the operators of these platforms act only as brokers and take on none of the duties of a conventional employer, meaning that all the business risks are borne by the person performing the work.

At company level, there is a risk that where staff are hired through a standardized selection procedure based on algorithms, these may be oriented towards male career norms and that women and people with non-standard employment histories may thus continue to be discriminated against.

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What these new forms of work have in common is that the people providing the services earn a low, unpredictable income and are forced into an employment situation where they have no social security, or into precarious self-employment.

The demands of the National Council of German Women's Organizations

/// To ensure gender-equitable careers orientation and advice, information about long-term labour market prospects and earning potential must be made available and explained in a considered way.

/// Girls and women must be informed about the prospects within different professions and sectors, in particular with regard to earnings, career prospects, and future viability. To this end, the recommendations of the "MINT-Pakt" (national pact for women in STEM occupations) must be implemented immediately.

/// Careers advice services must eliminate gender stereotypes so that girls and women have equal access to information and insights into technical, IT and industrial occupations with good future viability.

/// Careers information must be adapted to the latest developments in the relevant professions. This information must be easily accessible to all, including people with disabilities. It must be easy to comprehend and it must be gender sensitive.

14 *Federal Ministry of Labour and Social Affairs. Arbeiten 4.0: Arbeit weiter denken https://www.arbeitenviernull.de/dialogprozess/gruenbuch/arbeiten-40.html (accessed on 28 Apr. 2019)*

15 *Dengler K, Matthes B. (2016). Auswirkungen der Digitalisierung auf die Arbeitswelt: Substituierbarkeitspotenziale nach Geschlecht. IAB, http://doku.iab.de/aktuell/2016/aktueller_bericht_1624.pdf (accessed on 2 Apr. 2019)*

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/// Studies must be conducted into the legal position of self-employed persons with regard to labour and social law, along with an analysis of their employment prospects, and the related impacts on women's access to employment that secures a livelihood and provides social security.

/// The selection criteria and algorithms in the software used for staff recruitment and staff development must take a diversity of skills, perspectives and career paths into account. They must also be free from discrimination and must be verifiable.

/// Labour market analyses must give more consideration to the employment histories of women, which often include more part-time work, career interruptions, and family responsibilities.

/// The labour market statistics of the Federal Employment Agency and research institutes must present the impact of the digital transformation on the actual employment situation of women, in order to identify areas that require action with regard to gender equality. This includes research into the impacts on women living in all kinds of different circumstances.

/// The effects of the digital transformation on income disparities between men and women must be identified.

/// Digitalization-related changes to women's occupational fields must be qualitatively and quantitatively assessed.

FURTHER PROFESSIONAL TRAINING

Women participate in further training offered by employers less often than men.[16] Labour market policy and education policy must counteract that phenomenon in order to ensure that digitalization and the digital transformation do not perpetuate the existing imbalances in development, participation and promotion opportunities for women.

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The digital transformation must not perpetuate the existing imbalances in development, participation and promotion opportunities for women.

16 *Federal Institute for Vocational Education and Training (ed.). Datenreport zum Berufsbildungsbericht 2018. Informationen und Analysen zur Entwicklung der beruflichen Bildung. Bonn 2018*

The demands of the National Council of German Women's Organizations

/// Targeted measures financed by the further training and continuing education funds of the federal government and the Federal Institute for Vocational Education and Training should be introduced and coordinated with programmes of the individual states to allow women to gain qualifications, for example by fostering a better redistribution of housework between the sexes.

/// The option for employers to pay for the continuing training of employees must be used to promote women and gender equality, and this must be an explicit objective of the Federal Institute for Vocational Education and Training.

/// The risks of jobs being substituted by machines in women's chosen fields must be explained in careers advice.

/// Algorithms used to assist with advisory activities must be free from discrimination and must be verifiable.

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/// Advice and continuing education measures relating to changes driven by digitalization must also be available for unemployed women, even if they are not eligible for financial assistance under employment law (SGB II/III).

/// Compulsory monitoring must be introduced to identify the extent to which access to company further training measures differs for men and women, considering in particular job security and promotion prospects. Also, women must have the same opportunities as men to participate in further training measures.

/// Company further training must benefit men and women equally, both quantitatively and qualitatively. Employers should create binding rules to enable women to participate in (company) further training and continuing education that is appropriate to their job and relevant to digitalization.

/// In future, continuing education options must be designed in such a way that they are available independently of location, time and work situation (e.g. shift work) and are therefore easier to combine with family responsibilities. Moreover, such options must be made available to all employees, regardless of their qualification level and whether they work full or part time.

LEADERSHIP AND ENTREPRENEURSHIP

Women are less likely than men to hold leadership positions and to found companies, particularly in the field of technology.[17] Even fewer women launch startups.[18] The digital transformation and the associated changes in forms of work could help achieve a more equitable distribution of leadership positions between men and women and could create new opportunities for entrepreneurship.

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The digital transformation and the associated changes in forms of work could help achieve a more equitable distribution of leadership positions between men and women.

17 *KfW Group (ed.). KfW Gründungsmonitor 2018, https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-Gr%C3%BCndungsmonitor/KfW-Gruendungsmonitor-2018-Tabellenband.pdf (accessed on 3 May 2019)*
18 *Bundesverband Deutsche Startups e.V. (2018). Deutscher Startup Monitor 2018. https://deutscherstartupmonitor.de/fileadmin/dsm/dsm-18/files/Deutscher%20Startup%20Monitor%202018.pdf (accessed on 3 May 2019)*

The demands of the National Council of German Women's Organizations

/// Prevailing career and leadership practices must be questioned in order to improve women's promotion prospects and increase the number of women in leadership positions.

/// In the context of the digital transformation, men and women's promotion prospects must not depend on their physical presence at the company.

/// Advice services and support must be offered to women wishing to found a company in any sector, including the service sector. In this regard, there is a need for a framework that specifically promotes women, such as targeted support for founding companies on a part-time basis, comprehensive advice services specifically for women, campaigns featuring successful women entrepreneurs as role models, and business incubators with workspaces specifically for women, particularly those founding startups.

/// Incentives must be created to encourage investors to proactively integrate gender factors into their investment analyses and decision-making processes in order to promote digital enterprises founded by women.

RECONCILING WORK AND FAMILY LIFE

Increasingly, information and communication technology (ICT) is enabling people to work away from their normal workplace and outside standard working hours. Mobile working can make it easier to reconcile family life with work and professional success, and can allow both partners to care for their children and other relatives. Where reconciling work and family life is predominantly negotiated within women's career pathways, the use of ICT can often mean that the classic "double burden" remains on women's shoulders rather than being shared equally between the sexes.[19] The expectation that the digital transformation will automatically solve the problem of reconciling work and family life must therefore be challenged. Instead, what is needed are suitable, legally binding company measures to enable all employees with family responsibilities to reconcile their work with their family life.

19 *Lott Y (2019). Weniger Arbeit, mehr Freizeit? WSI Report No. 47, Institute of Economic and Social Research, https://www.boeckler.de/pdf/p_wsi_report_47_2019.pdf (accessed on 12 Mar. 2019)*

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The expectation that the digital transformation will automatically solve the problem of reconciling work and family life must therefore be challenged.

The demands of the National Council of German Women's Organizations

/// Legal, collective-agreement, and company (health and safety) regulations and standards must be introduced to govern mobile working and new forms of work.

/// Effective, generally binding protection must be established to prevent mobile working from blurring the lines between professional and personal life.

/// Generally applicable standards for home office work and mobile working must be established. Employees must be able to freely choose whether or not to work this way.

/// Companies must make ICT-supported working methods available in a gender-equitable way. Women and employee representatives must consistently be included in developing, establishing and monitoring mobile working forms and work processes on site.

/// Discussions about reducing regular working hours should be pushed forward, in view of the fact that the use of digital technologies is predicted to increase business productivity and save time.

/// Companies must promote and expand gender-equitable workplace concepts. This includes allowing, as a matter of course, women and men who are bringing up children or caring for infirm relatives to work more flexibly with the help of ICT, and enabling workers of all ages and in all circumstances to choose when and where they wish to work.

/// Research projects should be commissioned to conduct long-term studies on reconciling work and family life as the use of ICT increases. Investigations are required into the technologies' impact on workers' ability to secure a livelihood, work-time burdens, promotion prospects, and any related changes driven by the digital transformation.

/////////////////// COMMUNICATION IN DIGITAL SPACES

Communication in digital spaces is an interactive process of producing, sharing and discussing information.[20] All users of online platforms can present themselves and discuss their own interests and the topics that matter to them. Social media have also come to play an intrinsic role in the design of campaigns, election campaigns, and civil-society initiatives. There are notable differences in the way that men and women use social media. While men intensively use online platforms to shape and express political opinions, women are less prominent in online debate – despite the fact that they use social networks more than men. Since the online activities of men are more visible, men have come to dominate digital discourse.

Women must participate more strongly in online discourse so that they and their concerns become more visible and gender equality can be achieved. Representations of gender on social platforms are often based on stereotypes.[21]

20 *Trepte S, Reinecke L (2013). Medienpsychologie. Kohlhammer: Stuttgart.*
21 *MaLisa Foundation (2019). Female Self-Representation in Social Networks, https://malisastiftung.org/wp-content/uploads/Selbstinzenierung-in-den-neuen-Medien.pdf (accessed on 12 Mar. 2019)*

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The sorting algorithms used by social media also help to replicate and reinforce gender stereotypes, and to perpetuate discrimination. The private data and personal rights of people participating in digital communication must be protected. Women today cannot move as freely around the internet as men, and this is partly because female users are increasingly being confronted with similar problems and offences as in the analogue world (such as harassment and stalking). Legislators have not yet found satisfactory solutions to these new challenges.

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SOCIAL MEDIA

Social media allow users to connect, communicate and collaborate via the internet.

According to the definition of the Federal Office for Information Security, **digital** or **cyber security** is concerned with "all aspects of security in information and communication technology. The field of classic IT security is expanded to include the whole of cyberspace. This includes all information technology connected to the internet and similar networks, and addresses all communications, applications, processes and information that take place there."[22]

Cyber violence refers to many different forms of attack including insults, defamation, social isolation, and forcing victims to act a certain way or alter their behaviour.[23]

Hate speech is public speech that expresses hate or encourages violence towards a person or group (based on such things as gender, origin, disability, age or sexual orientation).

VISIBILITY, PARTICIPATION AND GENDER STEREOTYPES

Women's active use of social networks does not automatically make them more visible. The vast majority of female users are active in closed groups and play a less prominent role in the internet in general and in online public debate. Men, on the other hand, write the majority of Wikipedia articles, for example, and are thus primarily responsible for generating online content.[24] Women should be empowered and encouraged to participate in public debate by exploring the potential of digital communication opportunities and making use of them.

Current use of communications on digital platforms, within filter bubbles, and in the advertising industry is replicating gender stereotypes and heightening discrimination against women and girls. A study by the MaLisa Foundation shows that girls in particular care about satisfying the expectations of their followers and therefore present themselves according to perceived gender-specific expectations.[25]

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Current use of communications on digital platforms, within filter bubbles, and in the advertising industry is replicating gender stereotypes and heightening discrimination against women and girls.

22 *Federal Office for Information Security. Cyber Sicherheit. https://www.bsi.bund.de/DE/Themen/Cyber-Sicherheit/cyber-sicherheit_node.html (accessed on 3 May 2019)*
23 *bff: Bundesverband der Frauenberatungsstellen und Frauennotrufe in Deutschland. Infothek Digitale Gewalt. https://www.frauen-gegen-gewalt.de/de/digitale-ge-walt-was-ist-das.html (accessed on 12 Mar. 2019)*

24 *Wikimedia. Wikimedia Germany survey 2016. https://meta.wikimedia.org/w/index.php?title=File:Analysis_Wi-kimedia_Germany_Editor_Survey_2016_on_Welcoming_Culture.pdf&page=5 (accessed on 3 May 2019)*
25 *MaLisa Foundation (2019). Female Self-Representation in Social Networks, https://malisastiftung.org/wp-content/uploads/Selbstinzenierung-in-den-neuen-Medien.pdf (accessed on 12 Mar. 2019)*

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The demands of the National Council of German Women's Organizations

/// Gender-sensitive media education must be structurally anchored in schools and vocational schools, and these measures must be adequately funded.

/// Support must be given to extra-curricular programmes and initiatives that give women and girls greater visibility in the forming and expressing of political opinions online and thus narrow the digital gender gap. Women and women's organizations should participate in the design of such educational programmes.

/// Support must be given to low-threshold measures and initiatives that remove the burden of having to present a perfect image online and that help women and girls develop their own identity. One such measure might be digital mentoring programmes.

/// The algorithms of social networks must not replicate gender stereotypes and intersectional discrimination, and they must be verifiable.

CYBER SECURITY AND CYBER VIOLENCE

It is important to preserve online anonymity as this protects women and can even make online exchange possible in the first place. The protection of personal data plays a crucial role in this. The Network Enforcement Act (Netz-werkdurchsetzungsgesetz – NetzDG) is currently the only piece of legislation reinforcing the right to protection for victims of digital violence. NetzDG obliges social network providers to delete obviously illegal content within 24 hours. Providers can decide for themselves what should or should not be deleted. The process is not transparent, and there is no independent supervisory body that has the power to prevent "overblocking" (the deletion of legally permissible comments), misuse of reporting instruments, or the monopolization of conversations by trolls. Gender-specific violence against women and girls does not only happen in the real world; it also happens online. Cyber violence is a growing global phenomenon that disproportionately affects women and girls. Because cyber violence is not recognized, classed and accepted as such, the legal instruments of the German penal code are often not used to their full scope in the interest of victims. Through agreements like the Council of Europe Convention on preventing and combating violence against women and domestic violence (the "Istanbul Convention"), the German federal government is obliged to implement effective measures to eliminate psychological – and thus also digital – violence against women and girls.

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The demands of the National Council of German Women's Organizations

/// There should be no obligation to use real names in social networks. A new criminal offence category should be created that helps victims of cyber violence. Any violations of personal rights, defamation of character, etc. that occur online should be legally pursued to the same degree as similar offences that occur offline.

/// The Network Enforcement Act (Net-zwerkdurchsetzungsgesetz – NetzDG) must be amended so that it protects all women during their online activities. Greater transparency must be created, and the deletion activities of networks must be more effectively controlled by an independent auditor.

/// Identification requirements must be introduced for bots (software that automatically disseminates content).

/// A federal government working committee should be set up, staffed by experts from consultative bodies and civil society. This committee should develop effective measures to tackle cyber violence. In addition, a coordination centre should be set up to manage services and projects. Women

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in all their diversity should be involved in these bodies.

/// A nationwide 24/7 contact point must be available for the victims of cyber violence. All existing advisory facilities and their shared projects relating to cyber violence should receive funding and support, and advice points for the victims of online violence should be more easily reachable, both online and locally.

/// Cyber violence against women and girls must be systematically recorded and monitored. Studies into the degree of online violence against women and girls must include the perspective of those affected.

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OUTLOOK

The digital transformation has tremendous social significance because of its impact on key areas of society such as the economy, education, the family, research, art, culture, administration, healthcare, politics, consumption, and sport. However, neither public discourse nor federal political debate properly addresses gender-specific aspects of how digitalization and the digital transformation will affect the labour market, communication, and access to education. As such, this issue has been inadequately dealt with to date.

With its three main focuses, this position paper aims to expand the discussion of the impact the digital transformation is likely to have on the lives of women in all their diversity. Each focus defines fundamental areas where action must be urgently taken to ensure that the digital present and future are more gender equitable.

We welcome the fact that the federal government's "Digitalisierung gestalten" implementation strategy recognizes digitalization as a cross-cutting issue of relevance for all policy areas.[26] However, it seems that the federal government only sees a need for a gender-policy approach within a few specific areas, for example

protecting women and girls from cyber violence, and the STEM action plan. What's more, the federal government's "Strategie Künstliche Intelligenz"[27] and the digital strategy of the Federal Ministry of Education and Research "Digitale Zukunft: Lernen. Forschen. Wissen"[28] include no gender-specific or women-specific approaches.

The National Council of German Women's Organizations believes a more comprehensive view is needed, and calls upon federal policy-makers to "promote the actual implementation of equal rights for women and men" (as formulated in the Basic Law) in the realm of digitalization and the digital transformation as well. It is necessary to set a specific course of action so that women can make genuine use of the opportunities offered by digitalization. To do this, we need to include everyone who is affected by this profound societal change. As the biggest women's lobby in Germany, the National Council of German Women's Organizations will naturally have a major part to play.

26 Federal Press Office (ed.). Digitalisierung gestalten. Umsetzungsstrategie der Bundesregierung, https://www.bundesregierung.de/resource/blob/975226/1552758/b480703ff5182a097d7fba7bff752281/pdf-umsetzungs-strategie-digitalisierung-data.pdf (accessed on 11 Apr. 2019)

27 The federal government. Strategie Künstliche Intelligenz der Bundesregierung. https://www.bmbf.de/files/Nationale_KI-Strategie.pdf (accessed on 24 Apr. 2019)
28 Federal Ministry of Education and Research (2019). Digitale Zukunft: Lernen, Forschen. Wissen. https://www.bildung-forschung.digital/files/BMBF_Digitalstrategie_web.pdf (accessed on 25 Apr. 2019)

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EXPERT
COMMITTEE

The Expert Committee is led by Birte Siemonsen (Business and Professional Women Germany). The other experts on the committee represent eight member organisations:

/// Yvonne de Andrés (Women in Publishing)
/// Nina Golf (Protestant Women in Germany)
/// Dr. Ursula Köhler (Women and IT group at the Gesellschaft für Informatik)
/// Ina Krauß (League of Women Journalists)
/// Mareike Richter (German Trade Union Confederation)
/// Theresa von Bischopink (Association of Catholic Women's Associations and Groups)
/// Prof. Dr.-Ing. Sigrid Wenzel (Association of German Engineers / Zonta Union)
/// Margrit Zauner (Association of Social Democratic Women)

Additional expertise was provided by Jutta Croll (German Digital Opportunities Foundation), Maren Heltsche (Digital Media Women), Dr Britta Matthes (Institute for Employment Research), and Prof. Isabell Welpe and Nicholas Folger of the Technical University of Munich.

The committee of experts was coordinated by Advisors to the National Council of German Women's Organizations Dr Bahar Haghanipour and Juliane Rosin, with the assistance of Johanna Wirxel and Juliane Zinke. The priority topic "Digital transformation and its impact on the lives on women" ran from 2017 to 2019.

The National Council of German Women's Organizations would like to thank all those involved in producing this paper for their contributions and support.

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