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The Interconnectedness of Digitalisation and Human Security in the European High North: Cybersecurity Conceptualised through the Human Security Lens

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Abstract

Digitalisation has increased rapidly in recent decades, and became integral part of the development agenda of most states. The development of cyberspace has led to numerous opportunities for human development, but it also has presented certain challenges to societies. In acknowledging the importance of digital technologies, many states have endorsed strategies for digital development and cybersecurity. Because these strategies are often state-centric, techno-deterministic, and simplistic, they disregard the interconnectedness and complexity of the opportunities and challenges these technologies can entail in a region-specific context.

This paper argues that the human security framework may be applied to analyse and study the region-specific implications of digitalisation. The multidimensional and comprehensive human security approach includes state-centric concerns as well as the needs and fears of people and communities in a specific region. Moreover, the human security framework enables the local population to voice their concerns. The insights that the human security approach offers could contribute to developing meaningful and targeted policies that address the concerns of people and communities in specific regions. The paper uses the argument on the European High North as a case study to show that digitalisation has region specific impacts and how digitalisation is interrelated with human security.

Keywords: human security, digitalisation, cybersecurity, European High North, Arctic, human well-being

1. Introduction

Discussions about security have undergone a shift from state security to the security of individuals and communities. In response to debates about the importance of human well-being and the acknowledgement that peace means more than the absence of war or physical violence, discussions have begun to focus on addressing the individual's freedom from fear and freedom from want.

Consequently, the discourse of security has been widened and deepened to focus on several aspects of human well-being.[1]

In recent decades, digitalisation has rapidly changed people's life and realities. In reaction, states not only started to formulate digital development strategies but also increasingly address threats to cyber infrastructure: cyber space has become securitised. In approaching the relatively new domain of digitalisation, the traditional security paradigm got reproduced as cybersecurity is usually conceptualised within a national security agenda and subject to military measures.[2] Similar to the traditional security discourse, cybersecurity, that is, the discourse about threats to cyber infrastructure, focuses on security aspects at the state level, paying little heed to the numerous implications of digitalisation for its effects on the lives and well-being of individuals and communities. Instead, cybersecurity strategies often assume that societies within states are homogeneous, leaving little room for regional particularities.

By examining the case study of the European High North (EHN), this paper aims to show that digitalisation affects people differently according to their specific contexts. The paper is based on the hypothesis that digitalisation affects individuals and communities differently from states and that policies need to be flexible in order to address specific contexts. In order to develop context- and region-specific policies, the human security framework is applied to analyse the opportunities and threats of digitalisation to the targeted communities. The human security approach is suitable because it addresses the interconnectedness of several areas of human well-being. Moreover, it allows people and communities to express the opportunities as well as the fears that they experience. The paper will elaborate the ways in which digitalisation is connected to human security by examining the EHN as an exemplary region. The paper concludes that the human security approach is a suitable framework for studying and analysing digitalisation to support meaningful policies for specific regions.

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1 Amartya Sen, 'Birth of a Discourse' in Mary Martin and Taylor Owen (eds), *Routledge handbook of human security* (Routledge/Taylor Francis Group 2014); S Neil MacFarlane and Yuen Foong Khong, *Human Security and the UN: A Critical History* (Indiana University Press 2006); Commission on Human Security, 'Human Security Now' (United Nations 2003).

2 Franklin D Kramer, Stuart H Starr and Larry K Wentz (eds), *Cyberpower and National Security* (1st edn, National Defense University Press: Potomac Books 2009).

2. The Development of a Comprehensive and Multidimensional Security Approach: The Human Security Framework

The academic discipline of security studies developed alongside the Cold War in the fields of political sciences and international relations in order to analyse geopolitical developments. Typically, security studies involve the analysis of threats or risks to a referent object in order to address conflicts or crises. In the traditional security approach, security studies focus on threats to the sovereignty or territory of nation states. Military measures and defence are at the forefront of the response mechanisms. During the second half of the 20th century the attention of international and intergovernmental debates increasingly focused on other issues that affect societies, which also affected security discussions. For example, the increasing understanding of the significant impacts of environmental degradation on human well-being, which began in the 1970s, led to the politicisation of the environment and the debate on environmental security.[3] In addition, the failure of the international community to mitigate global inequalities, including poverty and hunger, intensified the efforts of the international community to stimulate positive human development. With the end of the Cold War and the hopeful assumption international conflicts and tension would decrease, alternative approaches to security became increasingly discussed. Consequently, the academic discipline of security studies widened and deepened its scope to shift attention from the state to its people. In this revived security debate, states were replaced by the individual as the main referent objects of security, which some claimed to represent a new paradigm of security.[4]

2.1. The Emergence of Human Security

The people-centred security approach quickly gained attention after the concept was introduced in the 1994 edition of the annual *Human Development Report* (HDR) published by the United Nations Development Programme (UNDP).[5] Focusing in what people need in order to live in "freedom from fear" and "freedom from want", human security "sits on interstices of human rights, human development and security discourses."[6] Instead of state sovereignty, it is culture, identity, human progress, or the physical integrity of the individual that is conceptualised as needing protection. The

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3 Lassi Heininen, '"Politicization" of the Environment, and Environmental Politics and Security in the Circumpolar North' in Barry Scott Zellen (ed), *The fast-changing Arctic: rethinking Arctic security for a warmer world* (University of Calgary Press 2013).

4 e.g. Commission on Human Security (n 1).

5 United Nations Development Programme, 'Human Development Report 1994' (Oxford University Press 1994).

6 Mary Martin and Taylor Owen, 'Introduction' in Mary Martin and Taylor Owen (eds), *Routledge handbook of human security* (Routledge/Taylor Francis Group 2014) 1.

concept of human security has redirected security discussions away from the national state toward human beings as potential victims of security hazards. However, there is no universal or satisfactory definition of human security, and over time many scholars have developed their own definitions, some of which are narrower and view human security as the protection of individuals or communities from physical violence.[7] When such a narrow understanding of human security is being applied it may be used as a political tool to legitimise military interventions, such as in Libya in 2011, where some argue that for the first time the international community implemented the Responsibility to Protect (R2P)[8] commitment.[9, 10] However, most definitions of human security expand the understanding "beyond physical violence as the only relevant threat/vector; and beyond physical harm as the only relevant damage."[11] The Commission on Human Security defined the goal of human security as "to protect the vital core of all human lives in ways that enhance human freedoms and human fulfilment," which means to protect "freedoms that are the essence of life."[12] Human security is thus connected to human freedoms. This broad understanding acknowledges that being secure is not limited to being free from physical violence and freedom from fear but that the survival of individuals and societies also depends on the absence of threats to material or ideational freedoms, such as the freedom from want. The requirements of societal survival include access to food or shelter as well as spiritual beliefs and personal identity. The 1994 HDR identified seven key areas of human security: economic security, food security, health security, environmental security, personal security, community security, and political security.[13] While these aspects are all individually important, they are also interconnected. For example, only in a sound environment can

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7 Human Security Centre (ed), *Human Security Report 2005: War and Peace in the 21st Century* (Oxford University Press 2005).

8 The R2P (Responsibility to Protect) commitment was endorsed in 2005 at the World Summit by all parties of the UN General Assembly. States are obliged to protect its own people from genocide, ethnic cleansing, war crimes, and crimes against humanity. If a state is unwilling or unable to do so, the international community may intervene to protect civilian lives and to prevent atrocity crimes, whereas military intervention may be used as a last resort of measures and only when authorised by the UN Security Council. UN Secretary General, *In Larger Freedom: Towards Development, Security and Human Rights for All* (Report of the Secretary-General A/59/2005, 2005).

9 Mary Martin, 'A Road Still to Be Travelled' in Saul Takahashi (ed), *Human rights, human security, and state security: the intersection*, vol 2 (Praeger, an imprint of ABC-CLIO, LLC 2014).

10 In response to the use of violent force by the government of Muammar Gaddaffi against protesters in 2011, the UN Security Council adopted Resolution 1970, which recalled "the Libyan authorities' responsibility to protect its population," thus explicitly referring to the R2P concept. In reaction to the failure of the Libyan authorities to comply with Resolution 1970, the Council adopted Resolution 1973, authorising member states "to take all necessary measures [..] to protect civilians and civilian populated areas," which was followed by NATO planes striking government's forces a few days later. UNSC Res 1970 (26 February 2011); UNSC Res 1973 (17 March 2011).

11 Des Gasper, 'Human Security: From Definitions to Investigating a Discourse' in Mary Martin and Taylor Owen (eds), *Routledge handbook of human security* (Routledge/Taylor Francis Group 2014) 32.

12 Commission on Human Security (n 1) 4.

13 United Nations Development Programme (n 5).

people find enough nutritious food to maintain a healthy diet. In fact, national defence, which is at the core of the traditional security approach, may be an important contributor to avoiding human insecurities as well. Nonetheless, the different areas of human security can also be conflicting. For example, while massive natural resource extraction may provide a labour market and satisfy economic security, it may also hamper environmental integrity.

Because of the lack of a common definition and the complex interrelations between the various areas of security, the concept has been vulnerable to criticism. While it has been argued that if "human security means almost anything, then it effectively means nothing,"[14] others have warned that in order to be useful human security must avoid to become "a loose synonym for 'bad things that can happen'."[15] However, by not reducing human security to a fixed list or a narrow definition, the approach can be "flexible enough to allow for a deeper understanding of the root of insecurities and capacities to address them."[16] The relevance to have a strict definition for human security can also be questioned, as the concept is not an analytical approach to study security from an academic angle, but to identify the threats and challenges that face individuals and communities. As such, human security has a policymaking agenda.[17] As Nobel prize laureate Amartya Sen pointed out, "the very lack of a general theory allows an openness that is important for this kind of work."[18] While the origins of the human security approach are closely related to development politics, which originated in discussions on the advancement of human development in the Global South, the concept also offers added value in developed or rich countries.[19] Such flexibility is necessary because human security is not related to wealth. In rich countries, the wealthy elite as well as minorities and marginalised groups may experience challenges to their security. Consequently, when human security is perceived as context specific, it becomes a flexible framework that is responsive to local particularities.[20]

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14 Roland Paris, 'Human Security: Paradigm Shift or Hot Air?' (2001) 26 International Security 87, 91.

15 Keith Krause, 'The Key to a Powerful Agenda, If Properly Delimited' (2004) 35 Security Dialogue 367, 367.

16 Shahrbanou Tadjbakhsh, 'In Defense of the Broad View of Human Security' in Mary Martin and Taylor Owen (eds), *Routledge handbook of human security* (Routledge/Taylor Francis Group 2014) 54.

17 Rita Floyd, 'Human Security and the Copenhagen School's Securitization Approach' (2007) 5 Human Security Journal 38.

18 Sen (n 1) 22.

19 Victoria Sweet, for example, showed how the human security concept is relevant to study the relation between extractive industries and indigenous women in the US. Victoria Sweet, 'Extracting More Than Resources: Human Security and Arctic Indigenous Women' (2014) 37 Seattle University Law Review 1221.

20 United Nations Trust Fund for Human Security, 'Human Security Handbook. An Integrated Approach for the Realization of the Sustainable Development Goals and the Priority Areas of the International Community and the United Nation System' (UN Human Security Unit 2016) <http://www.un.org/humansecurity/sites/www.un.org.humansecurity/files/hs_handbook_03.pdf> accessed 12 January 2017.

2.2. The Application of Human Security in International Governance

The United Nations has led the application of the concept of human security. In fact, "most of the development work carried out by UN and other specialised development agencies during recent decades, including the 2000 Millennium Development Goals (MDGs) and 2015 Sustainable Development Goals (SDGs), is linked to the areas of human security."[21] The concept of human security can be applied to both evaluate and develop responses to threats that challenge the survival, livelihood, and dignity of people. It serves as a multidimensional analytical framework for assessing challenges to human development.[22] The significance of human security has also been affirmed by numerous legally binding agreements, such as the United Nations Framework Convention on Climate Change (UNFCCC), and by numerous UN Security Council resolutions. The concept of human security is also related to human rights. The Vienna Declaration of 1991, which states that all human rights are universal, represents the holistic view that underlines the human security agenda.[23] In regard to human security in the Arctic, ground-breaking work has been carried out with the Arctic Human Development Reports (AHDR), which assessed challenges to human development in this region.[24]

3. A Multi-Faceted Security Approach to the European High North

In this paper, the European High North (EHN) is defined as the Arctic regions of Finland, Norway, and Sweden. While the Russian Federation extends geographically into the European Arctic, its socio-economic characteristics differ from those of the Nordic countries.[25] Because Finland, Norway, and Sweden are all members of the European Economic Area and the Schengen Area, they

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21 Kamrul Hossain and others, 'Constructing Arctic Security: An Inter-Disciplinary Approach to Understanding Security in the Barents Region' (2017) 53 Polar Record 52, 57.

22 United Nations Trust Fund for Human Security (n 20); United Nations Trust Fund for Human Security, 'Human Security in Theory and Practice. An Overview of the Human Security Concept and the United Nations Trust Fund for Human Security' (UN Human Security Unit 2009) <http://www.un.org/humansecurity/sites/www.un.org.humansecurity/files/human_security_in_theory_and_practice_english.pdf> accessed 12 January 2017.

23 Hossain and others (n 21) 58.

24 AHDR (ed), *Arctic Human Development Report* (Stefansson Arctic Institute 2004); Joan Nymand Larsen and Gail Fondahl (eds), *Arctic Human Development Report: Regional Processes and Global Linkages* (Nordic Council of Ministers 2014).

25 E.g., the average income in the Arctic regions of Finland, Sweden, and Norway are between 48,000 and 64,000 USD, whereas for example in the Murmansk region it is below 15,000 USD; similarly, the GRPs of the Arctic regions in Finland, Sweden, and Norway are between 44,000 and 63,000 USD whereas in the Murmansk region ca. 12,500 USD in 2013. (*Patchwork Barents*) <http://patchworkbarents.org/> accessed 19 November 2017.

are connected through the free movement of persons, services, and free trade. Hence, the border with the Russian Federation is not only physically visible but also distinct in socio-economic terms. This difference is also evident in the more developed telecommunications infrastructure in the EHN.[26] Because this makes the northern parts of Finland, Norway, and Sweden more alike, the paper's focus lies on this area.

3.1. Characteristics and Particularities of the European High North

The EHN includes many features that are common in the Arctic, such as the history of being seen as a vast reservoir for the exploitation of natural resources by outside actors, which includes the national governments of the Arctic states that are all located south of the Arctic.[27] The indigenous peoples suffer from a colonial past, and more generally speaking, the northern inhabitants have had little say in the use of the area and its resources. Nonetheless, the Arctic is not a uniform region and its various parts have distinct features. However, the EHN is homogeneous in the sense that it is the most developed area and among the most densely populated areas in the Arctic. The Nordic welfare-state model contributes to similar socio-economic development within the region.[28] Nonetheless, significant characteristics distinguish the EHN from the southern parts of these states, within which they represent a peripheral and developing region. These characteristics include the EHN's low population density, which has resulted in relative remoteness, vast rural areas, and long distances between urban spaces, as well as long, cold winters with extended periods of darkness. A large portion of the population, particularly in the rural areas, relies on traditional and non-market economic activities, such as reindeer herding or fishing. In many rural municipalities the labour market is poor, and unemployment rates are high.[29] The infrastructure, such as health care,

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26 For instance, Norway has an Internet Penetration Rate of 98 per cent, Sweden of 93.1 per cent, Finland of 92.5 per cent, whereas the rate for the Russian Federation is only 71.3 per cent. Internet Live Stats, 'Internet Users by Country 2016' <http://www.internetlivestats.com/internet-users-by-country/> accessed 1 December 2017. The Arctic Zone of the Russian Federation is currently covered with telecommunication services by 45 per cent. Arctic Council, *Telecommunications Infrastructure in the Arctic: A Circumpolar Assessment* (Arctic Council Secretariat 2017).

27 With the exception of Iceland, which – by some definitions – is the only country being considered entirely located in the Arctic.

28 Greg Poelzer and Gary N Wilson, 'Governance in the Arctic: Political Systems and Geopolitics' in Joan Nymand Larsen and Gail Fondahl (eds), *Arctic human development report: regional processes and global linkages* (Nordic Council of Ministers 2014).

29 This is particularly true for the northern parts of Sweden and Finland, where in 2017 some of the countries' municipalities with the highest unemployment rates were located. For example, in the last quarter of 2017 most municipalities in the Lapland county had a higher unemployment rate as the Finnish average (11.2%), with Salla (20%) and Enontekiö (17.7) having the highest; or the municipalities of Haparanda (6.1%) and Pajala (5.4%) being significantly above the Swedish average of 4.0%. Source: (*Statistics Finland*) <http://stat.fi/index_en.html>

Information and Communications Technology (ICT), and public transportation, is less developed than in the southern parts of these states.[30] The health challenges include higher suicide rates[31] and shorter life expectancy than in the countries' average.[32] Increasing industrialisation, particularly mass-scale natural resource extraction, continues to challenge the traditional lifestyle of the local population.[33] Furthermore, the EHN is also the homeland for minority groups such as the Sámi people, who are indigenous to the EHN.

3.2. Security in the Arctic

Because of the similarities the EHN shares with the Arctic region, security discussions on the EHN can be embedded in an Arctic context. While the Arctic was a militarised arena during the Cold War, the presence of armed forces can rather be seen as strategic use of the Arctic space, such as for communication, than as part of a conflict over the control of the area or its resources.[34]. Because of the advancement of global warming and the subsequent melting and retreat of the sea ice, the maritime Arctic has become easier accessible. The vast amounts of natural resources that are estimated to be in the Arctic are one of the main drivers of the Arctic states' interests in the region,[35] which led to an increase of the region's geostrategic relevance. While some international media channels have interpreted this development as a race for resources, increasing military

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accessed 21 February 2018; 'Unemployed' (*Regionfakta*, 15 January 2018) <http://www.regionfakta.com/Norrbottens-lan/IN-ENGLISH-/Workxx/Unemployed/> accessed 21 February 2018.

30 For residents in rural areas the closest hospital might be several hundred kilometres away. Many municipalities have no railroad connection, and some municipalities are connected to the county capital by only one bus per day.

31 The suicide rates in the counties Lapland (FIN) and Finnmark (NOR) are higher than in the national average, whereas in Norbotten (SWE) and Troms (NOR) the suicide rates are below the national average. T Kue Young, Boris Revich and Leena Soininen, 'Suicide in Circumpolar Regions: An Introduction and Overview' (2015) 74:27349 International Journal of Circumpolar Health.

32 While In northern Finland, life expectancy is 0.3 years higher than the national average for women (82.2), it is 1.2 years lower for men (avg. 76); in Norrbotten the life expectancy is 0.9(m)/0.7(f) years less than in the Swedish average (79 m/ 83.2 f); and in Finnmark 1.6(m)/0.2(f) and in Troms 0.6(m)/0.2(f) years less than in the Norwegian average (78.2 m/ 82.8 f). All data are for the period 2005-2009. Source: (*Circumpolar Health Observatory*) <http://circhob.circumpolarhealth.org/> accessed 21 February 2018.

33 Gerald Zojer and Kamrul Hossain, *Rethinking Multifaceted Human Security Threats in the Barents Region: A Multilevel Approach to Societal Security* (University of Lapland Printing Centre 2017); Nymand Larsen and Fondahl (n 24).

34 Rolf Tamnes and Sven G Holtsmark, 'The Geopolitics of the Arctic in Historical Perspective' in Rolf Tamnes and Kristine Offerdal (eds), *Geopolitics and security in the Arctic: regional dynamics in a global world* (Routledge 2014).

35 Gerald Zojer, 'Energy Politics in Arctic Governance: A Shift from Environmental Protection toward Economic Development?' (Diploma Thesis, University of Vienna 2014); Lassi Heininen, 'Arctic Strategies and Policies: Inventory and Comparative Study' (The Northern Research Forum and University of Lapland Press 2011).

tension in the region,[36] the states with territories in the Arctic increasingly have cooperated in addressing Arctic issues. Established in 1996, the Arctic Council is the best example of a vital intergovernmental forum on Arctic cooperation. Ongoing military spendings in the Arctic can be seen as contributing to safeguarding the increasing civil and economic activities in the area, rather than being the symptom of growing military tension.[37] Hence, many scholars have argued that the Arctic is a region of peace and stability rather than one of conflict and that conflicts are more likely to occur within states or between different economic or societal actors than between states.[38] Consequently, in discussing the Arctic from a security perspective, a comprehensive and multi-level approach that considers the complex relations between geopolitical, economic, and socio-cultural developments is necessary to meet the multi-faceted challenges to societal well-being in the Arctic and to respond to the region's unique characteristics, peoples, and environment.[39]

4. Conceptualising Digitalisation and Cybersecurity in the European High North

Digitalisation has progressed rapidly in recent decades. In particular, the widespread use of the Internet for civil purposes has affected all spheres of everyday life, changing realities significantly. The magnitude of the advancement of digital technologies can be exemplified by the fact that in 2017, the four biggest global publicly traded companies with the greatest market capitalisation were in the ICT sector.[40] The Nordic countries have led the advancement of digitalisation. Finland was

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36 E.g. Simone Schlindwein and Gerald Traufetter, 'Race for the North Pole: Nations Vying for Arctic Treasures' Der Spiegel (21 August 2007) <http://www.spiegel.de/international/world/race-for-the-north-pole-nations-vying-for-arctic-treasures-a-501034.html> accessed 14 April 2016; Jamie Doward, Robin McKie and Tom Parfitt, 'Russia Leads Race for North Pole Oil' The Guardian (29 July 2007) <https://www.theguardian.com/world/2007/jul/29/russia.oil> accessed 30 March 2015; Thomas Omestad, 'Global Warming Triggers an International Race for the Arctic' U.S. News (9 October 2008) <https://www.usnews.com/news/world/articles/2008/10/09/global-warming-triggers-an-international-race-for-the-artic> accessed 12 May 2015.

37 Paal Sigurd Hilde, 'Armed Forces and Security Challenges in the Arctic' in Rolf Tamnes and Kristine Offerdal (eds), *Geopolitics and security in the Arctic: regional dynamics in a global world* (Routledge 2016).

38 e.g. Rolf Tamnes and Kristine Offerdal (eds), *Geopolitics and Security in the Arctic: Regional Dynamics in a Global World* (Routledge 2014); Hilde (n 37); Heather N Nicol and Lassi Heininen, 'Human Security, the Arctic Council and Climate Change: Competition or Co-Existence?' (2014) 50 Polar Record 80.

39 Hossain and others (n 21); Zojer and Hossain (n 33); Lassi Heininen, 'Security in the Arctic' in Natalia Loukacheva (ed), *Polar Law Textbook II* (Norden 2013).

40 At the time of writing (3rd quarter 2017) Apple leads the list of publicly traded companies with the greatest market capitalisation before Google's parent Alphabet Inc., Microsoft, and Amazon. With the Alibaba Group, Tencent, and Facebook, three more ICT companies make it into the top ten. 'FT500: The World's Largest Companies' (Financial Times, 29 September 2017) <https://markets.ft.com/data/dataarchive/ajax/fetchreport?reportCode=GMKT&documentKey=688_GMKT_170929> accessed 29 September 2017.

the first country to make the access to broadband a basic right.[41] Indeed, 97 per cent of the populated area has LTE[42] network coverage. Although Norway has excellent broadband connection on land, including the settlements of Longyearbyen and Ny-Ålesund on the Svalbard archipelago, its maritime areas still lack reliable connectivity. In Sweden, 99.98 per cent of households had access to LTE in 2015 although surface coverage deteriorates away from housing, and remote areas lack coverage.[43] Norway, Sweden, and Finland are also within the top five digital economies in the world, according to the Digital Evolution Index.[44] According to a telecommunication service provider, in average every Nordic citizen has three connected "things" (i.e., Internet of Things devices) such as cars, smart home devices, and so. This number is expected to double by 2021.[45] In the EHN, the use of digital technologies and services has become widespread despite the region's remoteness. For most members of the northern societies, the use of digital technologies has become part of everyday life, and digital technologies have been combined with traditional activities. The rapid dispersal of digital technologies is also result of governmental efforts to encourage the establishment of an effective telecommunications network by providing financial incentives or the necessary regulatory framework.[46]

4.1. Digitalisation in National and Regional Strategies

The countries of the EHN have all developed national and regional strategies to bolster digitalisation. The three national agendas promote digital development to stimulate business opportunities, foster innovation and productivity, and to provide access to telecommunication services.[47] The state is considered a central actor in providing services through regulations that

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41 This means, every permanent resident and business has the right to broadband Internet access. '1 Mbit Internet Access a Universal Service in Finland from the Beginning of July' (Ministry of Transport and Communications, Press Release, 29 June 2010) <https://www.lvm.fi/-/1-mbit-internet-access-a-universal-service-in-finland-from-the-beginning-of-july-782612> accessed 20 November 2017.

42 LTE (Long-Term Evolution), which is commonly marketed as 4G, is a high-speed wireless communication standard that is used by mobile devices such as smartphones. Currently LTE is the fastest mobile communication standard available for the consumer market, and can reach data transfer speeds of up to 300 Megabits per second.

43 Arctic Council (n 26).

44 Bhaskar Chakravorti and Ravi Shankar Chaturvedi, *Digital Planet 2017. How Competitiveness and Trust in Digital Economies Vary across the World* (The Fletcher School, Tufts University 2017).

45 'New IoT Report: Connected Things Set to Double by 2021' (TeliaCompany, 2 March 2017) <https://www.teliacompany.com/en/news/press-releases/2017/3/new-iot-report-connected-things-set-to-double-by-2021/> accessed 18 November 2017.

46 Arctic Council (n 26).

47 Ubiquitous Information Society Advisory Board, Ministry of Transport and Communications, 'Productive and Inventive Finland. Digital Agenda for 2011-2020' (2011); Norwegian Ministry of Local Government and Modernisation, *Digital Agenda for Norway in Brief. ICT for Simpler Everyday Life and Increased Productivity*

encourage the development of telecommunications infrastructure. People are seen as users, and the services provided shall be made easy to use for them. However, these strategies focus on national development and target society at the national level; they do not address regional particularities.[48]

The Arctic Council, which is an example of regional cooperation, has recently focused on digitalisation issues. The Council acknowledged that telecommunication efforts are important for thriving Arctic communities, and it supports improvement of telecommunications in the Arctic.[49] The Council established the *Task Force on Telecommunications Infrastructure in the Arctic*, which carried out a circumpolar assessment of telecommunications infrastructure in the region. Its findings were published in 2017.[50] So far, the Council has not provided a strategy or policy to address this matter. However, as an outcome of the assessment, the Council decided to establish the Task Force on Improved Connectivity in the Arctic in order to encourage pan-Arctic telecommunications solutions that meet the needs of those who live, operate, and work in the Arctic.[51] In the Chairmanship Program for the Arctic Council 2017-2019[52] the Ministry of Foreign Affairs of Finland defined *connectivity* as a priority area, arguing that communication networks and services "are a lifeline for human activities and a prerequisite for economic development in the Arctic."[53] According to the program, electronic communication services will improve the safety and quality of life of those who live in or visit the Arctic. These services will facilitate e-learning, allow access to media, and enable the development of digital health and social services. Digital technologies are also addressed in the Arctic strategies of Finland and Norway. In the Finnish Arctic strategy, in "addition to efficient transport services, reliable, high-capacity information networks and digital services are instrumental to boosting economic activity in the north and improving competitiveness in the country as a whole."[54] In its Arctic strategy, Norway points out the importance of digital infrastructure in reducing the long distances between communities and businesses in the north, to

(Meld St 27 2015–2016 Report to the Storting, 2016); Government Offices of Sweden, 'ICT for Everyone — A Digital Agenda for Sweden' (Ministry of Enterprise, Energy and Communications 2011).

48 See also Mirva Salminen and Kamrul Hossain, 'Digitalization and Human Security Dimensions in Cybersecurity: Appraisal for the European High North' (2018) 54 Polar Record 108.

49 Arctic Council, 'Fairbanks Declaration' (2017).

50 Arctic Council (n 26).

51 Arctic Council (n 49) art 19.

52 The Arctic Council has eight Member States (Canada, Denmark/Greenland, Finland, Iceland, Norway, Russian Federation, Sweden, USA) and the chairmanship rotates biennially. From 2017 to 2019 Finland is chairing the Council.

53 Ministry of Foreign Affairs of Finland, 'Finland's Chairmanship Program for the Arctic Council 2017-2019' (2017) 7.

54 Prime Minister's Office, 'Finland's Strategy for the Arctic Region 2013' (Prime Minister's Office Publications 2013) 37.

improve search and rescue (SAR) efforts, monitor the environment, manage resources, and exercise sovereignty.[55] However, Sweden has not addressed the issue of digitalisation in its Arctic strategy.[56]

While there are many similarities in the EHN, cross-border approaches to digitalisation remain only embedded in a pan-Arctic perspective. However, the differences among the Arctic regions are significant. Greenland, Alaska, and the Arctic areas of Canada and the Russian Federation are sparsely populated. The challenges in establishing digital communication differ from those in the EHN, where the telecommunications infrastructure is already well developed. Considering the socio-cultural and socio-economic similarities as well as the existing infrastructure, a policy that focuses on the EHN seems appropriate because it could focus on the specific characteristics of the region.[57]

The focus of the current strategies is on promoting economic development, especially in the regional context where advancing e-government is emphasised, and digitalisation is approached from a techno-deterministic and positivist perspective.[58] Telecommunication services are seen as improving the quality of life, but the current strategies do not address the potential fears or challenges local inhabitants and communities may experience through the advancement of digitalisation. The strategies in the Arctic context also highlight the importance of telecommunication services for safe and efficient large-scale economic activities, such as fisheries or natural resource extraction. Although sound operations protect local communities from additional harm, such as through mitigating accidents and their effects, efficient resource extraction is also of strategic interest to the states of the EHN,[59] as the majority of the benefits of these operations are transferred to the economic and political centres that are south of the Arctic.[60] Thus, it can be concluded that the states in the EHN promote the advancement of digital technologies in their Arctic regions in order to foster development, but they also have geostrategic incentives to establish and protect telecommunication services in these areas in order to secure their national economic interests.

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55 Norwegian Ministries, *Norway's Arctic Strategy — between Geopolitics and Social Development* (Norwegian Ministry of Foreign Affairs and Norwegian Ministry of Local Government and Modernisation 2017) 32.

56 Ministry of Foreign Affairs, 'Sweden's Strategy for the Arctic Region' (Department for Eastern Europe and Central Asia, Arctic Secretariat 2011).

57 Salminen and Hossain (n 48).

58 ibid.

59 Zojer (n 35); Heininen (n 35).

60 Gerald Zojer, 'The Role of Hydrocarbon Development in Arctic Governance: A Suitable Approach for Human Development in the Region?' in Kamrul Hossain, José Miguel Roncero Martín and Anna Petrétei (eds), *Human and Societal Security in the Circumpolar Arctic. Local and Indigenous Communities* (Brill Nijhoff 2018).

4.2. Securitisation of Cyber Threats: The Cybersecurity Discourse

When a social, scientific, economic, or other issue gets societal attention to the extent that political action is taken to address it, it has become politicised. When an issue appears as significant that a state actor such as a government considers it as an existential threat which might justify emergency measures, it has become securitised, which makes the securitisation of an issue a powerful act. "Securitization can thus be seen as a more extreme version of politicization."[61] With the increasing importance of digital services and telecommunication infrastructure for the functioning of present societies and states, Finland, Norway, and Sweden — as well as many other states — have endorsed strategies that focus on securing critical cyber infrastructure, which makes cyber infrastructure the referent object of cybersecurity. Potential threats are, for example, cybercrime or cyber warfare, which endanger essential digital services.[62] Cybersecurity strategies are state centred and follow a traditional security approach. In order to respond to cyber threats, the states established cyber defence units which also cooperate or are integrated to the states' armed forces. However, cybersecurity strategies lack sensitivity to regional-specific characteristics, and societies are conceptualised as homogeneous within the entire state. These strategies do not address the fears about digitalisation that individuals or communities may perceive, focusing instead on threats to the state's cyber infrastructure.[63]

4.3. The Interconnectedness of Key Areas in Human Security and Digitalisation in the European High North

Although the regional development strategies may consider the particularities of a region, similar to cybersecurity strategies, they reproduce a narrative based on the state's perspective on economic development. However, human well-being cannot be reduced to economic growth, particularly if only marketed activities are taken into account. Human well-being includes non-material aspects such as living in a sound environment, cultural integrity, and spiritual fulfilment.[64] This is

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61 Barry Buzan, Ole Wæver and Jaap de Wilde, *Security: A New Framework for Analysis* (Lynne Rienner Pub 1998) 23.

62 Ministry of Justice, *A National Cyber Security Strategy* (Fact sheet Ju201701e, 2017) <https://www.government.se/49edf4/contentassets/b5f956be6c50412188fb4e1d72a5e501/fact-sheet-a-national-cyber-security-strategy.pdf> accessed 7 December 2017; Norwegian Ministries, 'Cyber Security Strategy for Norway' (2012); Secretariat of the Security Committee, 'Finland's Cyber Security Strategy' (2013) Government Resolution 24 January 2013 <www.yhteiskunnanturvallisuus.fi/en>.

63 Salminen and Hossain (n 48).

64 Hossain and others (n 21); Haydn Washington, *Human Dependence on Nature: How to Help Solve the Environmental Crisis* (Routledge/Earthscan 2013); United Nations Development Programme (n 5).

particularly true for the EHN, where many people perceive that other aspects of life are more important than financial wealth,[65] and they feel well despite the absence of a flourishing labour market.[66] Thus, the emphasis on economic development as a main benefit of digitalisation risks the exclusion of meeting the needs and wants of the EHN's inhabitants.

When the UNDP introduced the human security approach in the 1994 HDR, it defined seven key areas of human security: economic security, food security, health security, environmental security, personal security, community security, and political security. This conceptualisation of human security remains very influential in discussions of human-centred security. It also appears to be a useful approach for addressing the effects of digital development because digitalisation affects all seven key areas of human security. In fact, the "role of information technology and communicational revolution must be considered in this context, since they are among the major sources of strength in improving the quality of living across the world."[67] The following sections provide examples of this interconnectedness with a focus on the EHN.

4.3.1. Economic Security

Digitalisation and cybersecurity strategies focus on the relevance of economic growth. Indeed, digital technologies offer opportunities for both established and new local businesses, but they may also threaten existing economic activities. On one hand, digital technologies enhance economic globalisation and enable local businesses to advertise and sell their products to a global consumer base as well as to customise their services and products for global markets, which may strengthen economic diversification and contribute to employment in remote areas.[68] On the other hand, existing businesses may be challenged by online sales from outside the region.[69] In many rural areas in the EHN, only a limited number of shops are available, which are often small and unable to compete with the product ranges and low prices of large online businesses. A shift from stationary trade to e-commerce may pose a challenge to community members who are not familiar with online

65 Zojer and Hossain (n 33).

66 Arja Rautio, Birger Poppel and Kue Young, 'Human Health and Well-Being' in Joan Nymand Larsen and Gail Fondahl (eds), *Arctic human development report: regional processes and global linkages* (Nordic Council of Ministers 2014).

67 Sen (n 1) 24.

68 E Carina H Keskitalo and Chris Southcott, 'Globalization' in Joan Nymand Larsen and Gail Fondahl (eds), *Arctic human development report: regional processes and global linkages* (Nordic Council of Ministers 2014).

69 About one quarter of online purchases in the Nordic countries are from abroad. Finnish online shoppers make almost 50 per cent of their online purchases abroad. PostNord, 'E-Commerce in the Nordics 2017' (2017) <https://www.postnord.com/globalassets/global/english/document/publications/2017/e-commerce-in-the-nordics-2017.pdf> accessed 23 November 2017.

shopping, such as elderly people. Unlike in urban areas, there might be no alternative to disappearing retailers. Although e-commerce may create new job opportunities, it is important that local inhabitants find training possibilities in the field; otherwise, the region is in danger of losing employees to areas where skilled labour is available. In the US, for example, most jobs created by e-commerce are concentrated only in a handful of large cities.[70] Digital technologies have also been adapted to traditional economic activities, such as reindeer herding. Some reindeer herder equip their animals with Global Positioning System (GPS) trackers, which makes it easier for them to trace their livestock efficiently. Thus, the utilisation of GPS trackers enables the herders to record their losses,[71] which is important for them to receive compensation. The data may also be used for other purposes, such as supporting the planning of land use and of vast mining projects.[72] Although digitalisation strategies emphasise the importance of telecommunication services for tourism, a village in Finnish Lapland advertises its limited accessibility: tourists visiting Torassieppi book a "digital detox" holiday.[73] Hence, for some the absence of telecommunication services is desirable, at least sometimes, which can make the lack of telecommunication services to an economic opportunity to remote areas.

4.3.2. Food security

Many inhabitants of the EHN gather berries and mushrooms to supplement their diet. The ability to obtain online information may contribute to avoid poisonousness food, such as certain mushrooms, potentially complementing traditional knowledge. Moreover, the data accessible online may also help them to obtain information about a healthy diet. GPS tracking of reindeer allows to spot injured animals, increasing the chance of successful rescue, contributing to food security. The tracking of predators may alert herders further contributing to successful reindeer husbandry.[74] The inhabitants of the north could use the Internet to share information about gardening in the harsh

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70 Robert Gebeloff and Karl Russell, 'How the Growth of E-Commerce Is Shifting Retail Jobs' The New York Times (6 July 2017) <https://www.nytimes.com/interactive/2017/07/06/business/ecommerce-retail-jobs.html> accessed 24 November 2017.

71 Philip Burgess, 'GPS Transmitters on Reindeer' <http://reindeerherding.org/blog/reindeer-blog/gps-transmitters-on-reindeer/> accessed 14 October 2017.

72 Pöyry Oy, 'Utilising Reindeers' GPS-Collars in Project Planning' <www.poyry.fi/sites/www.poyry.fi/files/media/related_material/reindeers_gps-collars.pdf> accessed 29 November 2017.

73 'A Digital Detox in Lapland' (Nordic Experience, 10 August 2015) <https://www.nordicexperience.co.uk/Finland/winter/Digital-Detox-Lapland> accessed 24 November 2017.

74 Trevor Mogg, 'Lapland Reindeer Go High-Tech with Tracking Sensors to Protect Them from Wolves' (Digital Trends, 24 December 2017) <https://www.digitaltrends.com/cool-tech/lapland-reindeers-tracking-sensors/> accessed 24 December 2017.

northern environment. Increased telecommunication infrastructure in maritime areas is important for fishing and subsistence harvesting so vessels can communicate their positions and other critically important information. More digital capacity for catch reporting can contribute to sustainable fish stock management.[75]

4.3.3. Health security

In the remote areas of the EHN, because the distances to medical services may be long, there is an enormous potential for telemedicine. Basic healthcare needs can be satisfied by only one medical staff and the broadband connection to a hospital.[76] Unlike in a distant hospital, local staff might be able to speak the same language as the patient, which would be beneficial for linguistic minority groups. For instance, elderly community members of the Finnish speaking minority in Bugøynes, Norway were happy when a retirement home was established in the village because they did not need to move to a facility where they could not communicate with the staff in their first language.[77] Digital technologies may contribute to preventing health insecurities, such as those caused by road accidents. In Finish Lapland, a mobile phone app informs drivers where reindeer have been spotted, thus preventing traffic accidents.[78] Drivers can also find information on road conditions to plan a safe journey.[79] The availability of digital services such as satellite images could contribute to safe travel in maritime areas by reducing the risk of accidents. Telecommunication networks are also beneficial in coordinating SAR missions,[80] as well as to call for help or to guide first responders.

4.3.4. Environmental Security

The environmental challenge that gathers most attention in current policies is climate change. The utilisation of digital technologies may help to mitigate greenhouse gas emissions. By using e-government paper can be saved[81] and people need to travel less.[82] By taking advantage of

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75 Arctic Council (n 26).

76 ibid.

77 Zojer and Hossain (n 33) 29.

78 'Porokello' <http://porokello.fi> accessed 30 November 2017.

79 Finnish Transport Agency, 'Traffic Situation' <http://liikennetilanne.liikennevirasto.fi/> accessed 20 November 2017.

80 Arctic Council (n 26).

81 Executive Office of the President of the United States, 'Report to Congress on the Benefits of the President's E-Government Initiatives' (2009)

telemedicine, the need to travel long distances to see a physician can be reduced. Moreover, online shopping decreases the need to travel long distances to buy, for example, clothing, furniture, and electronics, which would help to reduce emissions particularly in rural areas.[83] By using digital technologies, such as smart phones or cameras, local inhabitants can contribute to environmental monitoring through citizen science.[84] However, the disposal of electronic waste poses a challenge, as waste need to travel long distances in the EHN and the disposal is energy intensive.[85] Additionally, the increased digitalisation of households could raise the demand for energy, which might lead to the need for new power stations. The growing demand for electronics increases the pressure on resource extraction and the potential for new mines, which might also negatively affect the nature in the EHN.

4.3.5. Personal Security

The 1994 HDR defined personal security as the absence from physical violence. Although the EHN is a peaceful environment, the amount of domestic violence and high rates of suicide are of concern.[86] In the absence of a tight network of psychotherapists, online services may contribute to providing support and preventing suicides. In order to mitigate the threat of domestic violence, digital technologies can be used for home security systems or to track repeat offenders via GPS as preventive measures, and mobile devices can be used for duress alarms or to report harmful incidents.[87] Mobile phone apps can also be used to alarm nearby users to help or serve as a witness,

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<https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/egov_docs/FY09_Benefits_Report.pdf> accessed 7 December 2017.

82 Eleni Zampou and Katerina Pramatari, 'An Approach to the Assessment of the Environmental Impact of E-Government Services', *ECIS 2011 Proceedings, 213* (2011) <https://aisel.aisnet.org/ecis2011/213> accessed 13 October 2017.

83 Deutsches CleanTech Institut, 'Klimafreundlich Einkaufen. Eine Vergleichende Betrachtung von Onlinehandel Und Stationärem Einzelhandel' (2015); Hanne Siikavirta and others, 'Effects of E-Commerce on Greenhouse Gas Emissions: A Case Study of Grocery Home Delivery in Finland' (2003) 6 Journal of Industrial Ecology 83.

84 E.g. Melanie Bergmann and others, 'Citizen Scientists Reveal: Marine Litter Pollutes Arctic Beaches and Affects Wild Life' (2017) 125 Marine Pollution Bulletin 535; Jeremy J Storer and others, 'KnoWare: A System for Citizen-Based Environmental Monitoring' (2016) 19 Informing Science: The International Journal of an Emerging Transdiscipline 125; 'New App for Reporting Invasive Marine Species in Sweden' (*Eye on the Arctic*, 28 August 2015) <http://www.rcinet.ca/eye-on-the-arctic/2015/08/28/new-app-for-reporting-invasive-marine-species-in-sweden/> accessed 25 November 2017.

85 Rebecka Snefuglli Sondell, 'Trading with Waste in Barents Region' (The Independent Barents Observer) <https://thebarentsobserver.com/en/ecology/2015/11/trading-waste-barents-region> accessed 1 December 2017.

86 Young, Revich and Soininen (n 31); Rautio, Poppel and Young (n 66).

87 Tim Prenzler and Lauren Fardell, 'Situational Prevention of Domestic Violence: A Review of Security-Based Programs' (2017) 34 Aggression and Violent Behavior 51.

to map incidents, or to network with other victims.[88] However, telecommunication and cyber space also might be used to spread hate, racism, and to bully people. Hence, members of vulnerable or marginalised groups may be exposed to additional harassment.

4.3.6. Community Security

Most people derive security from their membership in a group, which provides them with a set of reassuring values and a cultural identity.[89] However, changing demographics challenges community integrity. In the EHN, where predominantly women seek higher education and move to urban places, rural areas are male dominated.[90] However, by bringing education to remote areas, digital technology not only can enable young people to stay in their communities but also allow those who left to remain in touch with their family and friends. Digital technology also can enable members of minority groups, which moved away from their community, to continue practising their language. Digital technologies, including video cameras and video editing on computers, can enable the inhabitants of the fast-changing EHN to document and share their traditional knowledge.[91] However, the relocation of socialising in cyber space may exclude community members who do not wish to or cannot take part in digital communication. For example, some may refuse to join social media because of privacy concerns or may be unable to join due to a lack of connectivity. Moreover, the increased access to global entertainment industries may challenge the continuity of local cultures.[92] For example, young members of rural communities might find it more appealing to play online games than to learn about traditional activities such as hunting,[93] posing a risk to the

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88 This has for example been implemented with the app "Touche pas a ma pote" ("Don't touch my friend;" http://www.touchepasamapote.be) in Belgium, SafeCity in India (http://www.safecity.in), or the website HarassMap (https://harassmap.org/en) in Egypt. Such initiatives can also contribute to preventive measures, such as to identify hotspots, or by expressing the limits a society is willing to accept.

89 United Nations Development Programme (n 5) 31.

90 Timothy Heleniak and Dmitry Bogoyavlenskiy, 'Arctic Populations and Migration' in Joan Nymand Larsen and Gail Fondahl (eds), *Arctic human development report: regional processes and global linkages* (Nordic Council of Ministers 2014).

91 See also Diane Hirshberg and Andrey N Petrov, 'Education and Human Capital' in Joan Nymand Larsen and Gail Fondahl (eds), *Arctic human development report: regional processes and global linkages* (Nordic Council of Ministers 2014) 387.

92 Nils Aarsæther, Larissa Riabova and Jørgen O Bærenholdt, 'Community Viability' in AHDR (Arctic Human Development Report) (ed), *Arctic human development report* (Stefansson Arctic Institute 2004).

93 Zojer and Hossain (n 33) 45.

continuance of traditional local knowledge. After all, the usage of socio-technic systems shape the choices and behaviour of people, and may cause them to lose their traditional culture and identity.[94]

4.3.7. Political Security

In the EHN the development of projects in mass-scale natural resource extraction is a main driver of the regional dynamics that significantly affect the livelihoods of the local population. Projects that negatively affect the environment or human health require an environmental impacts assessment. Although the states of the EHN have implemented tools, such as hearings, for public participation, these tools do not guarantee that the public will be truly engaged in these processes.[95] Additionally, people in the rural areas of the EHN are often too isolated to participate in decision-making processes. Digital technologies can allow these people to gather information, thus enabling their political engagement. This can be through governmental websites, project related (e.g. as part of the social impact assessment of developing projects, or to inform inhabitants about the impacts of projects), or social media channels. Yet, online sources may also challenge political security as it may be abused for spreading disinformation.

Telecommunication allows people to exchange ideas, meet, and collaborate over great distances to discuss issues that concern their communities. Digital technologies may make it easier for people to voice their concerns and to be heard. Social media in particular have become a platform for discussion. However, not everyone wants to or can take part in online discussions, but they run the risk of being excluded. In addition to enabling involvement in local political processes, digital technologies integrate the local population into global communication, which allows Arctic communities to promote their cultural distinctiveness and present their challenges to the outside world.[96] However, the increased utilisation of digital technologies might increase the vulnerability of individuals to suppression by the state.

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94 William H Dutton and Mark Graham, 'Introduction' in Mark Graham and William H Dutton (eds), *Society and the internet: how networks of information and communication are changing our lives* (First edition, Oxford University Press 2014).

95 Marina Nenasheva and others, 'Legal Tools of Public Participation in the Environmental Impact Assessment Process and Their Application in the Countries of the Barents Euro-Arctic Region' (2015) 1 Barents Studies 13.

96 Chris Southcott, 'Globalization, Culture, and Northern Identities: Some Considerations for a Northern Dimension Foreign Policy' (2005) 29 Polar Geography 103.

5. *Discussion*

The states of the EHN approach digitalisation and threats to cyber infrastructure from two perspectives. On one hand, digital development strategies focus on the services that contribute to societal development, such as stimulating economic growth and advancing e-government. On the other hand, cybersecurity strategies focus on mitigating the threats to critical cyber infrastructure, which is necessary to maintain the economic prosperity. The opportunities and threats derived from digitalisation are constructed from the state's perspective to ensure its interests. Although the concerns raised in the cybersecurity agenda are legitimate and the digitalisation strategies include important aspects regarding individual and community well-being, they disregard the interconnectedness and complexity of the opportunities and challenges digitalisation can entail in a region-specific context.

5.1. The Intersection of Human Security and Digitalisation

Digitalisation affects many spheres of people's everyday lives, and it has context-specific implications for the EHN. However, the current positivist, techno-deterministic and simplistic digital development strategies do not consider the potentially negative effects of digitalisation and its complex interrelations in various aspects of human well-being. Moreover, the focus of the current strategies for economic growth is questionable. Human well-being is not limited to financial wealth but includes non-material values, such as spirituality and cultural integrity. In fact, it was also the purpose of the HDRs, which introduced the human security concept to a wider public, to shift attention away from national income as the main marker of human development to highlight the multidimensional understanding of human well-being.[97] The human security approach offers an analytical framework that has the breadth and flexibility required to analyse not only these interconnections but also the conflicts that may occur among the different aspects of human well-being. This approach can be adapted to address different topics in specific contexts. It is also suited to analysing an issue of special interest in order to raise awareness of the issue and motivate responses to it.[98] The human security approach may be used to identify existential threats to

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97 Mahbub ul Haq, *Reflections on Human Development: How the Focus of Development Economics Shifted from National Income Accounting to People-Centred Policies, Told by One of the Chief Architects of the New Paradigm* (Oxford University Press 1995).

98 Oscar A Gómez and Des Gasper, 'Human Security Guidance Note. A Thematic Guidance Note for Regional and National Human Development Report Teams'
<from http://hdr.undp.org/sites/default/files/human_security_guidance_note_r-nhdrs.pdf> accessed 15 August 2017.

individuals or communities.[99] The framework may be used to obtain information that is people-centred, comprehensive, context-specific, prevention oriented, and empowering,[100] as it requires the participation of the people affected. The concept of human security draws "attention to the specific intersections of diverse forces in persons' and groups' lives,"[101] and it can be applied to support the development of multi-faceted and context-specific policy priorities. Consequently, the human security framework is an appropriate tool for assessing the effects of digitalisation in order to develop strategies and policies that are inclusive and sensitive to the needs and fears of the people and communities located in the EHN.

5.2. Cybersecurity Seen Through the Human Security Lens

The fact that cyber space has become securitised is evidence that digital services are considered to have significant societal relevance. In cybersecurity strategies, which emphasise the state's perspective and militarisation, the traditional security approach is reproduced. The securitisation of an issue legitimises strong responses. The traditional security approach often drives states to allocate disproportionate levels of resources to military measures. Because the state has a monopoly on force, the traditional security approach is usually a uni-actor approach,[102] in which the state is the securitising actor. Hence, the state officials, that is, the decision-makers, decide whether an issue has a security dimension. Nonetheless, because digital technologies are significant in contemporary societies, there is good reason for securitising cyber space. However, in the prevailing cybersecurity paradigm, the effects on individuals and sub-state communities are underrepresented or absent.

Applying the human security approach could contribute to closing this gap in the present policies. The holistic methodology of the human security framework focuses on the lives of real persons, and it leads to the intersections of the factors and patterns that affect diverse individuals, groups, and localities, including stress factors and vulnerabilities. Such patterns might reveal that certain groups are more exposed to the effects of specific issues than other groups are. Hence, the concept of human security could serve to create new understanding and insights into specific vulnerabilities with regard to interconnections and intersections.[103] When the voices of individuals and communities are heard, they become securitising actors because they can raise awareness of the

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99 Floyd (n 17).

100 United Nations Trust Fund for Human Security (n 20).

101 Gasper (n 11) 34.

102 Gunhild Hoogensen Gjørv, 'Security by Any Other Name: Negative Security, Positive Security, and a Multi-Actor Security Approach' (2012) 38 Review of International Studies 835, 846.

103 Gasper (n 11).

issues that concern them. Applying the concept of human security gives individuals and communities a vehicle to address their fears and the challenges to their freedom. When states implement security measures, they may have detrimental effects on individuals and communities.[104] For instance, when states take defence measures to combat cybercrime or terrorism, observation and oppression may be increased. Individuals may feel that their privacy is threatened. Hence, the concept of human security may also be perceived as opposing the state's power because it allows people, including marginalised or the most vulnerable groups within societies, to express their concerns. These actors endeavour not only to seek security by avoiding threats but also to build their capacity. By understanding that security does not depend on one actor but that it is achieved through the relations between actors, the practice of security is "potentially 'democratise[d]', which in and of itself has an emancipatory effect, allowing previously marginalised voices to be heard throughout the process."[105]

Cybersecurity strategies address important threats to the cyber infrastructure, which is relevant for the inhabitants of the EHN. However, these strategies fall short in addressing the people's needs and fears. Used in digitalisation, the human security approach may supplement the existing cybersecurity agenda. The human security framework is inclusive for both traditional security concerns and people-centred concerns. Similar to discussions on widening the traditional security approach, discussions on cybersecurity may benefit from deepening the agenda to include this comprehensive and multidimensional approach, which would contribute to the development of meaningful and inclusive cyber policies.

6. Conclusions

Digitalisation affects the everyday lives of the inhabitants of the EHN. The prevailing development strategies that include digitalisation focus on economic growth, and they tend to reproduce the economic interests of the state. In response to the acknowledgement of the significance of digital technologies for our present societies, the states in the European North have endorsed cybersecurity strategies that are state-centric and emphasise military security. They do not address individual well-being or the concerns of communities at the sub-state level.

[104] Hoogensen Gjørv (n 102).
[105] ibid 846.

This paper shows that digitalisation has regional-specific implications that are not properly addressed by the strategies and policies in place. The paper suggests that utilising the framework of human security would bring additional value to identifying the context-specific needs and fears of the population in the EHN. The application of the human security approach does not neglect the prevailing cybersecurity agendas but supplements them by adding a people-centred dimension. Utilising the concept of human security would enable the people and communities in the EHN to become securitising actors, which would allow them to emphasise the challenges and effects of digitalisation as they perceive them.

The human security framework can be used to conduct analyses that seek to determine the context-specific implications of digitalisation in the EHN. Because of the similar socio-economic and socio-cultural settings throughout the EHN a joint digitalisation strategy could maintain the use of synergies based on regional homogeneity. The utilisation of the human security framework would empower the people and communities and encourage them to raise their voices, thus providing comprehensive support for developing digitalisation policies that meet the needs and concerns of people and communities in their specific contexts.