Digital Technologies in Promoting Peace: Integration, Impact and Challenges.

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TABLE OF CONTENTS

ABSTRACT

Nowadays, digital technologies play a significant role in the daily lives of people and progressively continue to be integrated into different domains. Peacebuilding and peacekeeping organizations do not appear to be immune to this process, as evidenced by the increasing number of digital technology applications in this field. This thesis explores how these technologies are used in peace operations, what impact and challenges there are in their implementation. Examining both on the strategic level and the contextual case study of Democratic Republic of Congo, the paper seeks to empirically explore if digital technologies are making traditional peace operation models obsolete. The comprehensive qualitative study of documents and literature base demonstrates that there is a non-alignment between the strategic discourse and reality. Digital technology is a supplementary dimension in peace operations that can expand the missions' capabilities, however it is still early to assert that the traditional peace operation models are being outdated by the development of digital technologies.

Key words: Peacekeeping, Digital Technologies, United Nations, Peacebuilding, Data, Information and Communication Technologies (ICTs), Democratic Republic of Congo (DRC)

LIST OF ABBREVIATION

AI	Artificial Intelligence
CAR	The Central African Republic
DFS	The Department of Field Support
DMSPC	Department of Management, Strategy, Policy and Compliance
DOS	Department of Operational Support
DPO	Department of Peace Operations
DRC	Democratic Republic of Congo
GIS	Geographic Information Systems
GPS	Global Positioning Systems
ICTs	Information and Communication Technologies
IDPs	Internally Displaced People
JOCs	Joint Operation Centers
MONUSCO	The United Nations Organization Stabilization Mission in the DRC
ONUC	The United Nations Operation in the Congo
SDG	Sustainable Development Goals

UAS/UAVs	Unmanned aerial systems/vehicles
UN	United Nations
UNIN	United Nations Innovation Network

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CHAPTER 1 | INTRODUCTION

1.1. Overview of the Study

Dynamic growth of digital technology is profoundly transforming the world today, influencing different fields and societies. Development and spread of affordable mobile devices, widespread usage of the internet, social media advancements and faster digital connections are tremendously changing our lives and the way we interact with others. 5.18 billion internet users around the globe were detected in April 2023, that is 64.6 percent of the worldwide population, and 4.8 billion out of them (59.9 percent) were social media users (Petrosyan, Statista, 2023). These numbers can denote substantial levels of digitalization and their prospects for a change in various spheres. The changes are impacting the nature of conflicts and the environment/ways wars and conflicts take place too. But what about peace? Are they affecting peace operations as well? Practice demonstrates that peacebuilding/peacekeeping organisations have not been immune to this technological transition either.

The technological development, changing patterns of societies and evolving threats/ risks in the field require peace missions to meet the reality and challenges of the constantly changing technological world. Peacekeeping operations are increasingly applying satellite devices, drones and new communication technologies for better observation and situational awareness, meanwhile peacebuilding missions are also using digital technologies for incident documentations, data gathering/ monitoring and better research. The UN has also started recognizing significance and impact of modern technologies for their operations and urging for more technological integration and innovation embracement within the system, including in UN peacekeeping missions.

Although there is a considerable level of efforts to modernise UN operations so it could meet the challenges of the 21st century and improve effectiveness of its operations, these alterations are rather slow and lagging.

Nevertheless, opportunities provided by the application of digital technologies are remarkable. Modern peace operations are witnessing a progressive deployment of surveillance aerial unmanned vehicles (UAVs) for expanding situational awareness and increasing the missions' capabilities. Satellite images and geographic information systems can help with crisis mapping and early warning, meanwhile data analysis benefits in detecting conflict risk areas. At the same time, simple mobile phones and access to the internet can assist in communication and engagement with local communities, and consequently promoting a more bottom-up approach of peacebuilding efforts. They are also used for capacity building of the troops, as well as fighting against destabilising disinformation campaigns that trigger further tensions and escalate the situation. Moreover, they are enhancing the possibility for speedy and accurate decision-making in peace operations, as well as assisting in protection of local civilians and refugees, IDPs by early warning. So, the possibilities are tremendous and thereby have significant policy implications. As a result, this development requires more research and exploration into the topic of digitalization of peace efforts. It is important to note that despite a substantial literature on peace operations itself and their impact, exploration of the role of digital technologies in peace remains in the early stages.

The aim of the work is to fill this gap and answer the research question if digital technologies are making the old peacebuilding/peacekeeping models obsolete.

1.2. Aims and Objectives

As it has already been mentioned, the dissertation's primary goal is contribution towards the existing knowledge and information gap regarding the application of digital technologies in peace operations, making an effort to understand how their application is changing the models for peace promotion and making further exploration of the understudied topic in the academic field. It aims to explore how these new digital technologies are being integrated in the field of peace operations, what kind of role and potential impact they have and what sort of challenges these technologies are accompanied with, and tries to determine whether digital technologies are making traditional/conventional peacekeeping/peacebuilding models outdated. The research explores different ways of their application in peace promoting efforts, both in peacekeeping and peacebuilding: for crisis mapping, crowdsourcing, data gathering and monitoring, communication advancement, group mobilizations, advanced drone applications and documentation etc. So, as a result, this paper contributes to strengthening the knowledge base and advancing the general and comprehensive understanding of digital technologies application in peace operations.

Furthermore, the thesis acknowledges both sides of the coin, hereby not only exploring the benefits and positive impact of digital technologies for peace, but also considering and exploring challenges/risks of this development. Potential danger of sensitive information leakage, privacy and surveillance concerns, risks of disinformation and cybersecurity issues are still an essential topic to discuss.

Due to the relative limitation of current literature on this topic, this thesis would benefit several readers both in academia and policy making (even if the paper is not policy oriented). Via conducting a comprehensive analysis of the current role

and impact of rising digital technologies in peace, this paper is highly useful and relevant to the security studies.

1.3. Research Question

To fill the gap between existing literature on peace operations and digital technologies, this thesis analyses the topic and attempts to explore how digital technologies' application is changing peacebuilding and peacekeeping operation models. To be precise, the central research question of the thesis is:

R.Q. Are digital technologies making traditional peace operations' models obsolete?

Via a qualitative method underpinning the study of intensive research, document analysis and a case study of the Democratic Republic of Congo (DRC) (see in the methodology part), the paper is aimed at finding the answer to the addressed question above.

1.4. Hypothesis

The initial hypothesis of the paper contends that digital technologies have a significant impact on the traditional peace operation practices while making them irrelevant in the context of new complex environments. These modern technologies are encouraging bottom-up approach to peacebuilding in communities, while gradually changing the nature of peacekeeping by enhancing the potential for application of intelligence practices- these factors are the main game changers in peace operations.

1.5. Scope and Limitations

The 2000s witnessed remarkable developments in broadband internet and advancements in social media platforms (Frangoul, 2018). A decade later provided profound expansion in mobile applications, development of big data and proliferation of mobile devices. These advancements indisputably have raised some questions in the academic field (including peacekeeping/peacebuilding) and have led towards more exploration of the topic. Consequently, there has been some progress in literature on technologies' role in peace operations, however it is vital to note that the research is still underway. Although there has been a number of research on peacekeeping/peacebuilding operations themselves, digitalization and the impact of modern technologies on peace operations is still a relatively new phenomenon.

As a result, information on this subject is relatively scarce, hereby there are some shortcomings in the academic literature. Moreover, as Hirblinger mentioned, the term digital technologies in peace is being interchangeably used with digital information and communication technologies (ICTs) (2022). So, there is also a tendency of widening the concepts, and the literature addressing the role of specific narrow kinds of digital technologies (like big data or smartphones only) on peace operations is notably limited. This makes it difficult to narrow, discuss and examine only focusing on one type of digital technologies, since more exploration and research is acutely needed in this domain.

Therefore, acknowledging relatively limited literature, as well as difficulties and shortcomings in narrowing the concepts, the research intentionally applies broad concepts of peace operations and digital technologies. Although there is a potential risk of limited focus and relative vagueness, considering scarce of

undergone research and flexibility that wider concepts offer, the paper suggests that it is the most optimal approach in the context of this specific study.

1.6. Ethical Considerations

Due to the scope and nature of this dissertation, the current research does not involve any human participants. This factor gives the possibility for mitigating the emergence of ethical concerns. Moreover, the methodology for this paper conveys document analysis and a case study. Both methods rely on publicly available secondary data that does not require any privacy or confidentiality concerns, although it does not make the research any less reliable. Hereby, these factors did not need ethical scrutiny in the context of this paper.

1.7. Chapters Outline

The dissertation is structured as follows. First, the research examines and analyses current literature to get a more comprehensive understanding of the topic and to detect potential knowledge gaps and questions for further discussions. The literature review demonstrates that scholars indicate the topic of digital technologies in peace operations as a new phenomenon requiring more research, although there are still several valuable and relevant works that can greatly serve for a consistent literature base. The authors note increasing scope of digitalisation in peace operations over the past few decades, as well as the growing acknowledgement of their rising significance in conflict zones for peacekeeping/peacebuilding by the organisations. Specifically noteworthy that authors indicate that better intelligence/information gathering was the initial reason behind application of digital technologies for UN peacekeeping operations,

and noting unarmed surveillance aerial vehicles' (UAVs) importance in this task. Further literature contends that international organisations are rapidly adjusting to the new technological changes, therefore there are new developments and shifts, directly or indirectly caused by the growth of modern technologies. The changes particularly convey a potential nudge towards intelligence-led peace operations, as well as new shifts in engaging local communities and focus on a more bottom- up approach.

Second, the dissertation further discusses conceptual framework and methodology for better comprehension of the research, for clearly outlining the structure and successfully addressing the central question. While defining the concepts (that were intentionally left broad), the study discovers that the concept of digital technologies is very wide and rather vague itself, and might include numerous types of different technologies. Since this topic is still underexplored and rather short of materials, the research intentionally uses broader meaning for digital technologies and peace operations to get more flexibility in bridging the gaps in knowledge.

Further explanation of the methodology outlines that the research is conducted via applying a comprehensive qualitative research technique dividing it into 2 sections: 1) analysing documents on technologies application in UN peace operations, thereby looking at the topic via strategic lenses; 2) then using a case study of the DRC to contextualise and explore an environment where these digital technologies are used. The last will give an opportunity to understand if the recommendations, plans and policies on paper are actually being implemented in reality since sometimes they might have a tendency of being rather aspirational than applied in real life. The study argues that via analysing 1) Final Report of the Expert Panel on Technology, and Innovation in UN Peacekeeping (2015); 2) UN Secretary-General's Strategy on New Technologies (September, 2018); and 3)

Strategy for the Digital Transformation of UN Peacekeeping (August, 2021), it can get a valuable understanding of the UN's new strategies, approaches and patterns of digital technologies use within the broader perspective of their peace operation activities. Meanwhile, the case study of the Democratic Republic of Congo (DRC) that has the most complex and largest UN peace mission deployment in history, would be an excellent case for exploring digital technologies implementation by peacekeepers in real life context.

Third, prior to addressing the question if digital technologies are making traditional peace operations' models obsolete and proceeding to empirical analysis, the study argues that it is helpful to explore the general practice of their application. Therefore, in this chapter the research discusses the way these digital technologies are applied both in peacekeeping and peacebuilding (the practices might vary) and discusses what potential challenges there are in deploying them in peace operations. Further research depicts that in peacekeeping, use of aerial surveillance vehicles and other different types of digital technologies are mostly deployed for intelligence/information gathering purposes. At the same time, digital technologies in peacebuilding were mainly deployed for early warning and raising voices, enhancing communication, and for documentation and research. The research also demonstrates that although there are many advantages of using digital technologies for peace operations, there are also challenges and risks such as privacy concerns, questions over data ownership, data leakage risks, as well as a danger of disinformation campaigns that might destabilise the situation, escalate the tensions and undermine the mission's efforts for promoting peace.

Fourth, after getting a general understanding of how these technologies are applied, further empirical study conveys the document analysis and the case study while seeking an answer to the question if digital technologies are making traditional peace operation models obsolete. The analysis demonstrates that

strategically in the context of the UN, the organisation is gradually recognising the rising role of digital technologies for peace and attempting to integrate them in their missions. While applying guiding principles and objectives, it is increasingly exploring the potential of digital technologies in advancing their peacekeeping efforts. However, the UN is still encountering obstacles such as the need to culturally transform the system itself for embracing innovations as a prerequisite. Meanwhile the case study of DRC depicts rather limited application of digital technologies as compared to strategic recommendations, thereby suggesting that there is a clear non-alignment between the strategic discourse and reality. Digital technologies are rather a supplementary dimension (not a substitute) in peace operations that can expand the missions' capabilities and effectiveness, however it is still very early to assert that they are making the traditional peace operation models outdated/obsolete.

Finally, after the empirical analysis and findings, the research proceeds to the concluding remarks. It reconfirms and concludes that although digital technologies are not making the traditional models outdated/obsolete at this stage - rather they get along, complement each-other and coexist, we still can not deny this prospective shift and change in future. However, there is an acute need for further comprehensive and consistent research in this domain, due to the constant evolving nature of modern technologies. And the research is needed both in academia and policy.

CHAPTER 2 | RELEVANCE TO THE ACADEMIC FIELD/LITERATURE REVIEW

This literature review is used to examine and analyse the comprehensive scholarly literature to explore relevant articles and books related to the application of digital technologies for peace. As a result, it has demonstrated that even though there has been a number of research on peacekeeping/peacebuilding missions, digitalization and the impact of technologies on peace operations is still a relatively new phenomenon. Therefore, it is worth keeping in mind that academic literature on this subject is still underway, hereby the information is relatively scarce and lacking within the social sciences.

To get a consistent literature base for this research, the work focuses on the broad phenomenon of digital technology's implementation and usage to make and build peace. There are several prominent works dedicated to this topic, and Andreas T. Hirblinger's article "Building a peace we don't know? The power of subjunctive technologies in digital peacebuilding" is one of them. The author notes there that the past few decades have been distinguished by the expanding nature of digitalisation in peacebuilding (2022). He states that digital information and communication technologies are being frequently used both by organisations building peace and working on conflict prevention, as well as stakeholders and conflict parties for advancing their objectives. He also indicates the increasing importance of technologies, specifically to the United Nations which started considering them as "frontline issues".

Likewise, scholars in this sphere started paying more attention to this development and exploring new opportunities of digital technologies for peace. The author's last observations demonstrate the increasing significance of further

exploration within this field. Hirblinger also argues that the concept of digital technologies in peacebuilding is being synonymously used with digital information and communication technologies (ICTs). According to the author, the current literature on this topic mainly concentrated on understanding the role of digital technologies with its "sincere peacebuilding approach" examining how, what the world is, however it can be also used to give a "subjunctive sensitivity" of what the world "could" be (p. 2-3, 2022). Hereby, it is important to realise that there has not been much research conducted on exploring the role of digital technologies in subjunctive peace. This is another indication that there are still a plethora of discussion points and exploration needed in the field of digital technologies' application for peace and that's what this research is being conducted for.

"The Oxford Handbook of Peacebuilding, State building, and Peace Formation" is one of the most valuable resources for thorough understanding of peace (eds. Richmond & Visoka, 2021). It does not convey solely the discussions from different disciplinary perspectives, but also provides a practical explanation of how peacebuilding/peacekeeping is changing during these transformative times, including the discussions of the digital revolution's role in peace. Similarly, to the previous author- Andreas T. Hirblinger, Allard Duursma and John Karlsrud also suggest that organisations involved in peacebuilding and peacekeeping operations, notably the United Nations, are increasingly adjusting to the rapidly evolving world of technology (2021, p. 415). In their chapter dedicated to technologies of peace, the authors discuss that the UN's application of technologies for their peacekeeping operations began in order to improve field intelligence in their risk assessments and to assist in fulfilling their missions' mandates starting from the beginning of 2000s.

This observation is a noteworthy contribution that requires a closer attention. Provided that due to the concerns of secrecy, ethical worries and political concerns, “intelligence” has always been considered as a suspicious and controversial term, particularly in the field of peacekeeping/peacebuilding. Dr. Annika S. Hansen also observes scepticism and sensitivity about employing intelligence in peace operations despite the widespread recognition of the necessity for intelligence and the understanding that digital technologies are boosting awareness and hastening decision-making processes (2020). She notes that for nearly 70 years, the word “intelligence” was a forbidden, taboo word and that UN members viewed it as spying on the territory of a sovereign nation. Moreover, it might potentially raise the questions of missions’ impartiality, as well as the concerns of the host country’s sovereignty itself. However, the practice demonstrates that new adjustments and strategies are necessary due to the rising complexity of peace operations. Hereby, the UN commencing its technologies application for their intelligence practices can possibly demonstrate a transformative shift or new trend in peace promoting operations, that has been caused by the technological, particularly digital technological growth and opportunities. It consequently raises the question if the new digital technologies’ applications are giving a nudge to intelligence-led peace operations, and hereby opens the window of opportunities for further discussions on this topic.

Sanjana Hattotuwa also discusses how moving from analogue and using new technologies’ applications have significant implications for promoting peace (2013). The author claims that peace negotiation practices changed from an “art” that was carried by specific selected types of people to broader social discussions due to proliferation of mobile devices and internet. Today, anyone with access to the later may share their opinion about a particular topic hereby adding their voice to the problem. When these voices are well chosen and well presented, the

collection of these voices have a significant potential to profoundly influence peace talks, either by supporting them or strongly resisting them. It is also benefited by the real-timeness on the web and social media, as well as the speed these debates are shared, discussed, changed and archived, with a thorough consideration of recent developments in translating machines and services. So, it is understandable if traditional peace promoters feel perplexed in this rapidly changing reality (2013).

Sanjana Hattotuwa further explains that there is a growing trend in “data philanthropy” by big businesses and governments to the general public. This practice of sharing the data on wars and conflicts allows to get new perspectives on the issues and strengthen peacebuilding operations via digitalisation of data for early warning of conflicts, as well as for analysing war crimes. Nevertheless, the author also notes that big data usage can be also used as a destabilising force in states with fragile democracies. Moreover, the studies on this topic in peace operations is yet to be thoroughly explored, hereby it is early to state that these technologies always contribute to peace strengthening. This is another indication for the acute need for further exploration of the topic.

Another highly relevant paper addressing this topic is the research article by Helena Puig Larrauri and Anne Kahl. In their work they indicate that the main characteristic of technologies is to make the peacebuilding operations more effective (2013). According to the authors, development and expansion of technology use in the developing world is opening new opportunities for involvement and engagement, thereby giving more chances for people to participate and influence the processes taking place in their country/society. These changes also present an opportunity to interact with peacebuilding procedures in new, up to date ways. One of the main features of this is a beginning to pay more

attention to early warning to prevent the start and intensification of a violent conflict.

New digital tools allow people to react, engage and report at the local level and hereby, significantly mitigating the conflict in their region. However, new technologies' application capabilities are not limited to it only, but it also gives the opportunity to communities to alter their minds and have stronger voices. And this is one of the most important advances and innovations of technology in peace- empowerment of people in promoting peace (2013). This is a significant observation that might potentially assist in answering our research question. New technologies, including digital technologies are making shifts in peace promoting processes while reaching out to local citizens. This trend can be an implication for the rise of a bottom-up approach to peace operations, consequently an indication of potential transformative shift in peace operations by the growth of technologies, particularly digital ones.

Further literature exploration demonstrated that while talking about peace operations, it is common to come across with the term "sustainable peace". As the international organisation with the main purpose to maintain international peace and security, the UN, plays a unique role in working towards peace in different regions of the world. While aiming for a long-term impact and stability, the organisation lately started recognizing and integrating more sustainability attempts in their operations. Recent rapid development of new technologies and changing security environment urged the UN to actively explore technologies' capacities in the context of peace and these tools are being more and more recognized as essential instruments to foster a sustainable peace. Martin Wahlisch discusses that the Secretary General of the United Nations Ban Ki-moon introduced UN Global Pulse in 2009 to examine how big data can be used to

advance the Sustainable Development Goals (SDG) and the Post-2015 Development Agenda (2020).

It was done since traditional statistics, household surveys and census data have proven to be useful in detecting medium to long-term development patterns of the region/conflict, however they were less ideal for getting speedy situational awareness to plan more timely and effective actions. Rapidly changing world requires a rapid response. Moreover, there was an unprecedented amount of data worldwide and hereby it is unsurprising to see that the organisation started exploring new ways to use them. This trend might demonstrate that although there might have been beneficial and useful tools for promoting peace, the changing nature of the world and conflicts, as well as the attempts to implement their missions more effectively, made the organisation tilt a little from the traditional models and search for new ways, new models for peace operations with the use of technologies, including digital ones. This prospect is quite thought-provoking and intriguing as it has the potential to provide key insights into the research question.

Similarly, to sustainable peace promotion, also known as peacebuilding we discussed earlier, the new technological capabilities are also being rapidly used in peacekeeping operations. According to Convergne and Snyder, the contemporary UN peacekeeping missions are increasingly applying geospatial technologies, satellite imageries, geographic information systems (GIS) and other digital tools to promote peace and implement their mandates (2015, p. 566). They argue that these technologies offer a wide range of useful applications and are enhancing peacekeepers' capacity to accomplish their duties. The UN, for instance, does not possess any satellite in space, instead it has agreements with a number of governmental and private satellite providers that give it access to their satellite provided materials. Digital Globe is one of the well-known commercial vendors,

meanwhile France and the USA are the one of the most known government suppliers (2015, p.568). Provided with the satellite imageries and GIS data, the peacekeepers make data visualisations, analyse, enhance situational awareness, and evaluate the information. As a result, these materials can be used for supporting boundary demarcation and enforcement, for mediation efforts, violence prevention, electoral support, civilians' protection, human rights monitoring, supporting rule of law and humanitarian assistance etc. So, via extraction and digitising of ground objects from satellite imagery, these technologies are giving a unique ability to the mission to enhance situational awareness and reduce risks to the peacekeepers on the field. This uniqueness can be an ongoing transformative shift and change in the sphere of peacekeeping and operational dynamics.

Another comprehensive and thorough analysis of the topic is done by Dr. Annika S. Hansen. The author observes that technological advancements affect the ways of how wars are waged, and peace are achieved (2020). As the new digital technologies are changing the nature of conflicts and influencing the environment peace operations are conducted in, it is creating more challenges for international organisations like the EU or the UN. Technological changes provide both new opportunities for improving effectiveness of the operations and promoting long-lasting peace, as well as pose risks for operations themselves. Digital tools are great assets for getting clear and real time operational understanding, identifying potential risks and for early warning. While allowing processing and analysis of large amounts of data, they can help fill the knowledge gaps and highlight the trends in that conflict dynamic. Dr. Annika S. Hansen also describes other benefits of digital technologies' application as satellite imagery, drones etc., but also touch upon the unintended negative consequences as challenges to ensure

collected data protection or the possibility of information manipulation in the digital sphere that might escalate the tensions even more rapidly.

Moreover, it is also worth noting that peace operations generally struggle to share information and the staff still have little expertise in using digital technologies and data processing. However, the main point here is that digital technologies are being rapidly used in peace operations, and as digital technologies have changed the nature of warfare, digital technologies also have the potential to change the nature of peace operations if utilised and applied properly (2020). The author observes that although technical solutions is a quite common practice today, it was irregular and varying from mission to another for many years. For example, when the unmanned aerial vehicles (UAVs) initially were used in the Democratic Republic of the Congo in 2013, for the first time it was the consequent indication of a more systematic approach across the missions. Now, UAVs are common technology in diverse peacekeeping operations in Mali, CAR, monitoring missions in Ukraine etc. (2020). So, effectively harnessed digital technological advancements can revolutionise the ways in which peace operations are conducted. Appropriate application has the capability of making a great shift in the very essence of peace operations since it changes the way they are conducted and consequently previous traditional models. In this context, this argumentation can significantly contribute to addressing the core research question if digital technologies are making the old peacebuilding/peacekeeping models obsolete.

To sum up, the current literature on the role of digital technologies in peace operations and the knowledge gap is as follows. First, all the scholars agree that the recent development in new technologies, particularly digital ones, is providing more and more opportunities for the peacekeeping/peacebuilding field and hereby, the international organisations are rapidly adjusting to the new realities of

the changing digital world. Most of the cases are referred to the operations conducted by the UN that has started rapidly exploring the capacities of new technologies and using them to fulfil the implementation of their mandate. Second, there is a common agreement that the study on this topic is yet to be thoroughly explored, therefore there is an urge for further in- depth research. Third, scholars like Dr. Annika S. Hansen point to the new developments and trends in rising complexity of peace operations- application of intelligence (2020). The nudge for it is also done by the technological advancements that have a potential for changing peace operations' nature when they are applied correctly. The authors Convergne and Snyder also emphasise shifts and changes in peacekeeping operations dynamics (2015), meanwhile Helena Puig Larrauri and Anne Kahl suggest that empowerment of people in promoting peace is the most significant innovation, hereby opening the window of opportunities for discussing new shifts such as more bottom- up approach in peace promotion (2013). So, there are several authors who observed that there are some new shifts and trends taking place in peace operations, directly or indirectly caused by the advancements in digital technologies. This is a significant observation that will consequently assist the paper in achieving its objectives and finding an answer to the central research question.

CHAPTER 3 | CONCEPTUAL FRAMEWORK & METHODOLOGY

3.1. Mapping the Key Concepts: Peace and Digital Technologies

To successfully address the question of digital technologies' increasing impact on peace and better comprehension of the topic, this subchapter will focus on the definition of the main concepts used in this work- more precisely peace and digital technologies.

History demonstrates that there were limited mechanisms to tackle violent conflicts before the twentieth century. Diplomacy and coercion were not always effective tools after, however the development of international organisations in the last century allowed the expansion of these mechanisms (Diehl and Balas, 2014). It has allowed the development of peace operations and as a result, peacekeeping has slowly expanded into encompassing a wide set of "conflict management missions and techniques" under the one term "peace operations" (2014). However, before discussing peace and peace operations, a reader needs to understand that there is no single accepted and standardised definition of the latter (Williams and Bellamy, 2021, p.29). In "Understanding Peacekeeping" Bellamy et al. provide a set of diverse types of peacekeeping operations only, such as traditional peacekeeping, preventive deployments, wider peacekeeping, transitional administrations, peace enforcement and peace support operations etc (2010). This refers to peacekeeping types only.

Apart from this, there are diverse terms such as "peacekeeping", "peacebuilding" or "peacemaking" etc. being used interchangeably, even though there is a slight difference between them. Although all of them have the same goal of peace

promotion, the peacemaking process is mostly about mediation and diplomatic efforts between the conflicting sides, meanwhile peacekeeping is a deployment of neutral civilian and military force to the conflict zone to maintain peace. The last, peacebuilding is no less controversial concept, but it is common to associate it with peace promoting efforts addressing very underlying dynamics/roots of the conflict and aiming for a long-term sustainable peace and stability. It describes external interventions for preventing an outbreak or resumption of armed conflict in the future (Barnett et al., 2007). In this work, we will refer to all of these concepts as "peace operations" hereby getting broader opportunity for exploring different missions and cases, not necessarily being limited by UN led missions or the operations authorised by the UN Security Council only. The latter specifically refers to the following chapter on digital technologies application on peacekeeping and peacebuilding, as well as to the exploration of case study in an effort to acquire as much information on this under researched topic.

Digital technologies in its turn are automatic systems and technological devices that can produce, process and/or store the information (Johnson, 2021). They can imply a very diverse and broad set of modern technologies such as satellite applications, social media, AI technologies used in drones or missiles etc. that can be very efficient in improving the flexibility and productivity of the organisation/ mission while significantly expediting their work. A noteworthy characteristic of digital technology is information technology (IT) that denotes the utilization of computers for the processing of information and data (Website of Study Smarter, no date).

According to Marc Berman, digital technology is "electronic tools, gadgets and systems that process, transmit and store data in binary form, that is unlike analog technology, which carries data in wavelength signals, digital technology encodes data as true or false, on or off" (2021). It is noteworthy that development of digital

technologies started in the mid 1900s after the creation of APARNET in 1969, invention of the first mobile phone in 1983 and evolution of the World Wide Web 6 years later. All these developments contributed to the advancement of digital technologies today that can be very different, ranging from digital watches to artificial intelligence (AI). Other examples of digital technologies include mobile phones, laptops, websites, AI, social media, cloud computing, robotics and many more (2021). The main benefits of these technologies are development of new methods of communication, better information flow, possibility of real-time awareness, automation of different spheres, possibility of storing and retrieving massive amounts of data, speed etc. that significantly facilitate different domains.

Digital technology is technical tools, automation systems that manage data and information (DigitalTechBusiness, no date). Its advancement was the fastest than any other innovation in human history, since more than 50% of the globe's population reached and have been using digital technologies within merely 2 decades. They contributed to making social connectivity more effective, offering automated independence and more convenience. Blockchain and cryptocurrency are also considered to be digital technologies.

So, as readers can see, digital technology includes an excessive number of different technologies, therefore the concept itself is a very wide and rather vague term. In this work, due to the limited information, it is intended to adopt and imply the broader/general meaning for digital technologies, rather than focusing on a specific type of digital technology. It will give more flexibility/adaptability to the research and help bridging the gaps in knowledge. It is also worth mentioning that the concept of digital technology will be interchangeably used with digital information and communication technologies (ICTs) since many scholars use them synonymously in the literature.

3.2. Methodology

This thesis is addressing the following central research question: “Are digital technologies making traditional peace operations’ models obsolete?” In order to answer this research question, the paper uses a qualitative research technique and a methodological approach that allows to assess how peacekeeping missions are utilising digital technologies in their operations or explore their intended course of actions in this domain. For more comprehensive research, it divides the methodology into two sections: 1) it looks at the digital technologies’ application in peace operations through the strategic analysis lens; 2) then it contextualises and explores an environment where these digital technologies are used, thereby exploring the implementation of these technologies in reality that might potentially differ from documents and strategies outlined on papers.

For the strategic analysis of the methodology part, this thesis proposes that document analysis is the best and effective approach to reaching the aim and objectives of the dissertation. Document analysis is a systematic procedure for reviewing and evaluating documents- analytical method that can be used for providing context, eliciting the meaning and getting an understanding of the topic (Bowen, 2009, p. 27). First, this method stands out by its accessibility and availability from other methods and provides vast amounts of information for more comprehensive analysis. It is a significant factor while analysing the topics that are still relatively unexplored. Second, document analysis can provide access to information when data is limited in other forms, as well when the topic/policy that’s being studied is new and underexplored (Shaw et al., 2004, p.260). Moreover, this approach is notable for its higher level of objectivity and ethical

advantage: 1) since the current research does not involve human participation in the study design, it mitigates and minimises the emergence of ethical concerns; 2) there is lower possibility of ethical issues because these documents are publicly available and do not raise the questions of privacy/confidentiality; 3) they self-identify the organisations responsible for their creation (2004, p.260). Considering all above factors, this paper notes that in the context of this topic and underexplored literature in academia, evaluating documents is an efficient method for creating a baseline for the research and giving valuable objective insights. The following documents will be explored to attempt to get the answer and achieve that objectives of the thesis:

- Final Report of the Expert Panel on Technology, and Innovation in UN Peacekeeping (2015)
- UN Secretary-General's Strategy on New Technologies (September, 2018)
- Strategy for the Digital Transformation of UN Peacekeeping (August, 2021)

Exploration and examining of these documents can give a valuable understanding of the peacekeeping/peacebuilding organisations' new strategies, patterns, and new approach developments within the broader perspective of their peace operation activities- specifically, within the context of the United Nations that has recognized the rising role of new technologies, the opportunities they provide and challenges they convey along. The main goal is to find out the latest developments of the organisation's approach and strategies towards application of new technologies (including digital) in their peace operations if they have some. The selected documents can shed light on the UN's (the largest organisation promoting peace) approach towards digital technologies' application and effectively demonstrate the landscape influencing decision-making in the organisation. They have been specifically developed for assessment of new

technologies' significance to the UN system, predominantly in peace operations of their missions. Therefore, the paper suggests that this set of documents will provide a comprehensive understanding of the topic. Moreover, they stand out by their recency, thereby increasing the relevance for current analysis.

However, like any other research method, document analysis also may raise the questions of reliability, validity, motivated authorship etc., but these concerns can be mitigated via applying conventional methods that expands qualitative rigour (for example, triangulation), adequate documents engagement, peer debriefing and so on. (L Dalglish et al., 2020, p. 1425).

According to the authors, document analysis can be used as an independent technique itself, however it can be also combined and used along with other types of methods to cross-validate and increase the validity and significance of the methods (2020, p.1426). Based on the research and its questions, it can be combined with various forms of interviews, quantitative analyses, as well as with other types of methods in policy research (2020, p.1426). Bowen also notes that document analysis is often used with other types of qualitative research methods "as a means of triangulation" (2009, p.29). According to Denzin, the latter is "the combination of methodologies in the study of the same phenomenon" (1970, p. 291). Via using this approach, a researcher enhances the credibility of the work and reduces some potential biases that might be present in a single study (Bowen, 2009, p.28). It also helps researchers avoid accusations that the findings of the study are based only on a single method, one source or originated from the researcher's biases (Patton, 1990).

Moreover, it is also worth mentioning that documents might encompass only restricted information and depict the reality they intend to portray- thereby leading to an imbalance between expressed intentions and actual reality (Abbot et al.,

2006, p.260). Particularly, it is relevant to cases when documents “embody plans for the future represent aspirations to a possible future reality rather than one that actually exists, and it is usually difficult to test the realism of such aspirations by documentary analysis alone” (Shaw et al., 2004, p.261). Therefore, this factor is important to bear in mind while analysing the above selected documents since they outline plans, objectives and recommendations for the organisation. Hence one might say they are aspirational in nature. Although it by no means implies that aspirational documents have no value- they are purposeful and deliberate statements of policies and strategies that influence the course of actions of the organisation (2004, p. 261).

Considering all these factors, the paper is aimed at combining and complementing the document analysis method with a case study method that will increase the validity and expand the reliability of the research. It is complemented by a case study of Democratic Republic of Congo so it could explore not only the digital technologies application in peace operations, but also the environment these technologies have been used in and hence giving the contextual insight.

As John Gerring regretfully notes, a case study concept is “a definitional morass” (2004, p.342). It might mean that the study is ethnographic, participant-observation, qualitative-small-N (Yin, 1994) or process tracing (George and Bennett, 2004), as well as exploring a single example or phenomenon which is the most common usage. Orum, Feagin and Sjoberg also confirm that the case study phenomenon itself is very broad and they define it as a thorough, multifaceted investigation of a single social phenomenon using qualitative methods (1991, p.2). The study might explore a person, a particular group of people or a particular unit and relate it to several variables (Heale and Twycross, 2018, p.7). So, as it can be seen, researchers might be putting different meanings to a case study method, but for this particular study we use John Gerrings general definition as “an intensive

study of a single unit for the purpose of understanding a larger class of (similar) units" (2004, p.342). The definitions suggest that a case study method can provide in-depth understanding and context of the studied phenomenon and give a real-life context. The latter is necessary in the context of this paper that explores document analysis via strategic lens, and requires an additional analysis of a real case for more reliability and validity. Therefore, the research suggests that a case study would be a beneficial method in the context of this paper.

For this purpose, the study will explore digital technologies application in peace operations conducted in the Democratic Republic of Congo (DRC). The latter has a long history of intense military and humanitarian crises that led to deployment of one of the most complex and largest UN peace operations in history (Jacob, 2016). The first UN operation in Congo (ONUC) was launched in 1960 and it was the first large-scale mission of the organisation having nearly 20,000 military personnel at its peak (United Nations Peacekeeping, no date). This country has one of the longest history of peace missions presence, particularly the UN and the latter's mission, The United Nations Organisation Stabilisation Mission in the Democratic Republic of Congo (MONUSCO) is still on the field with a very wide mandate mitigating violence and contributing to the overall recovery of the country. It is the largest UN mission in the world with 18,399 personnel costing the international community USD$1,086,018,600 per year, according to 2020 data (Bihuzo, 2020).

Due to the continuous history, recency and large-scale nature of the mission, the DRC can be an excellent case study for exploring the environment where peace operations take place with wider application of modern technologies. For example, it is worth to note that the very first unmanned aerial vehicles (UAVs) initially were used in the Democratic Republic of the Congo in 2013 thereby giving the precedent for other peacekeeping operations and indicating a more

systematic approach across the missions (Hansen, 2020). The Crisis Tracker is a geospatial database and reporting project tracking armed group activity and conflict-related incidents has been widely used in DRC, as well as Voix des Kivus, a platform that assists to document human rights abuses in the eastern Democratic Republic of Congo for documentation and research to assist with peacebuilding efforts. These factors suggest that the DRC case study can provide a unique lens for exploring modern technologies applications, specifically digital ones, in peace operations. Although the study suggests that peace operations in the DRC can be a good example for investigating digital technologies implementation in real context, it is still important to remember that this topic is still not extensively explored and might have some scope/limitations because of this.

CHAPTER 4 | INTEGRATION AND CHALLENGES

Prior to addressing the question of if digital technologies are making traditional peace operations' models obsolete and proceeding to empirical analysis, it is helpful to examine the general practice of their application and have a look at how these technologies are being used in the first place, and what potential challenges there are in deploying them in peace operations. For this purpose, in the following subchapters, the paper explores their integration and challenges/ risks to bear in mind.

4.1. Digital Technologies for Peacekeeping

The need for more efficient field intelligence to detect the risks for the implementation of mandate and security of peacekeepers/civilians, led to more embracement of modern technologies in peacekeeping operations. After the former Secretary-General Ban Ki-moon's efforts and the issue of the Report of the High-Level Independent Panel on Peace Operations, there have been a considerable number of discussions and further attempts to integrate modern technological capabilities within the UN and improve peacekeeping missions through technological innovations (Duursma and Karlsrud, 2021, p. 416). Further, we will explore these integrations, although not necessarily being limited by the peace operations of UN missions alone.

a) Application of unarmed surveillance UAV's for better situational awareness

Undeniably, the most common practice of using digital technologies for peacekeeping is the example of unarmed UAS/UAV's for surveillance operations. Currently, these technologies play a key role in getting information, better situational awareness and real-time data in peacekeeping. They can be used for monitoring numerous aspects in conflict zones: watching trans-border activities of armed groups, movement of different rebel groups, illicit arms trades, monitoring refugee camps and IDPs settlements, observing the damage of infrastructure and environmental problems, as well as documenting human rights violations etc. For example, by the Security Council's 1706 Resolution, the UN peacekeeping missions can use aerial surveillance along the Sudanese borders with the Central African Republic (CAR) and Chad (Apuuli, 2014). Moreover, as these surveillance drone capabilities proved to be beneficial in peacekeeping missions for monitoring and thereby expanding the capacities to protect refugees and humanitarian aid workers, with the help of drones, the United Nations Satellite Centre (UNOSAT) also conducted a field mapping operation for the International Organization of Migration (IOM) to map sites of internally displaced persons (IDPs) (Karlsrud and Rosen, 2013). It also bears mentioning that the OSCE and EU monitoring missions deploy such surveillance UAVs in Ukraine and Georgia as well (Hansen, 2020).

Although the Security Council granted the UN Peacekeeping missions to use UAVs in 2013 for the first time, the organisation already had some experience of drone application by that period. For example, in 2006 the UN peacekeeping mission's operations in DRC was supported by a European force, where Belgian troops brought UAVs with them. In another instance, the UN acquired drone capabilities when a European force operating in eastern Chad transitioned to a UN peacekeeping mission in 2009. This case was very beneficial to the UN troops since they could engage with drone applications and fulfil their mandate via

successfully monitoring the opposing troops, and expanding the protection of refugees, IDPs and humanitarian workers (Duursma and Karlsrud, 2021, p. 417). These technological integrations demonstrated enhanced situational awareness and consequently better implementation of their mandate.

Studies also demonstrate that apart from monitoring troop movements and expanding capabilities to support protection of civilians, refugees and humanitarian workers, these drones can be efficiently used for support and delivery of humanitarian aid. According to Esberg and Mikulaschek, the drones' capabilities can be used for delivering light-weight packages, thereby giving more efficiency to the mission and leaving less ecological footprint (2021, p. 16). Moreover, the peacekeepers can use these vehicles for extending WiFi connectivity or cell phone signals to the region where they operate, for example to refugee camps, polling stations or areas affected by natural disasters (2021, p.16).

b) Satellite and geospatial imaging

Another common type of remote imaging is satellite imagery technologies that have been used by the UN since early 1990s when the UN Situation Centre purchased satellite data for the first time (Smith, 1994, p.185). High-resolution satellite imagery has proved to be beneficial for peacekeepers in diverse tasks like boundary demarcations, support for the negotiation and implementation of ceasefires and peace agreements, electoral assistance, stabilisation, human rights monitoring, humanitarian assistance etc. (Esberg and Mikulaschek, 2021, p. 14). They can serve an important role in identifying sources of fresh water while the peacekeepers construct their compounds, assessing the accessibility of roads, as well as getting intelligence information on the region (2021, p.14).

Talking about water, advanced geospatial imaging can help the peacekeeping missions in improving the odds of successful drilling (The Final Report, 2015, p.32). For example, the peacekeeping mission in Mali in collaboration with the Geospatial Information Systems Section successfully located around two dozen water-producing boreholes after previous achievements in Darfur and Western Sahara. It is a significant success for peace operations as well, since environmental degradation and resource shortages can exacerbate already existing conflicts and put at risk human security.

It has already been mentioned that the United Nations Satellite Centre (UNOSAT) was helping with mapping sites of IDPs with assistance of drones. Expanding this topic more, satellite images identify the locations in need of protection like IDPs shelters and refugee camps. For example, it helps in identifying growth of refugee camps or tracking active fire locations after a conflict, and assess the numbers (Esberg and Mikulaschek, 2021, p. 15). Moreover, these technologies proved to be beneficial in the efforts to expand the security of peacekeepers in the field. While increasing situational awareness and providing information on potential risks in the field, they help the peacekeepers increase their safety and assist in better decision-making. For example, the active fire maps in Kenya conflict demonstrated that satellite cameras ensured speedy detection of patterns and specific location of the events (2021, p.15).

c) Data analysis

According to Dorn and Giardullo, there is a growing gap between the enormous quantities of imagery acquired from different digital tools such as UAVs etc. and the "rudimentary ability" of the UN to analyse them (2020, p.93). For example, the organisation does not have special software for looking at the all the past footage to identify the images at a specific location. As the level of data is

tremendously increasing, there is a need for more software for complex analysis, pattern recognition, change detection etc. in peace operations. Application of AI might greatly benefit the missions in this task. So, to overcome the same issue in eastern Ukraine, the OSCE Special Monitoring Mission staff asked for an AI and machine learning training from some of the OSCE states. Apart from this, "the staff had training in Open-Source Intelligence (OSINT) and remote sensing training in 2019, and now a limited number of Open-Source officers work since at least 2017 at the mission's headquarters" (Dorn and Giardullo, 2020, p.93).

d) Social media

Analysis of social media data can give valuable and real-time understanding about the public opinion in the region of peace operation (Esberg and Mikulaschek, 2021, p. 9). For example, studies on Twitter data can provide insights on political sentiments, anti-governmental attitudes or any other trends in volatile environments, and this gives an opportunity for UN peace operations to use these possibilities and build analytic capacity for the missions. Via using platforms such as ProBox, Meltwater and Brandwatch, the organisation can track a specific trend while analysing the growth of a specific hashtag referring to their area. Or it can analyse more complex forms such as underlying tensions or violent rhetorics via text analysis software. These are the opportunities social media provides to peace operations; however, the practice shows that today the missions mainly use social media to facilitate information-sharing, coordination and monitoring the current situation (2021, p.10).

4.2. Digital Technologies for Peacebuilding

a) **data gathering for early warning and raising voices**

Although there is relatively more exploration of how modern technologies, particularly digital technologies, are being applied in the peacekeeping domain, the studies in peacebuilding remain even shorter and underexplored. It is worth noting that digital technologies can play a significant role in supporting peacebuilding activities, specifically in data gathering for early warning and raising voices. As in the age of information the data and knowledge has transformed into one of the most valuable currencies, peacebuilding organisations are also rapidly adjusting to this new landscape. As Duursma and Karlsrud note, one of the most well-known examples of data use in peacebuilding can be the Ushahidi (meaning "testimony" in Swahili) platform (2021, p. 417). This open-source platform uses a crowdsourcing technique that allows data gathering and monitoring the violence incidents in Kenya since 2008. Ushahidi can serve as a great example of bottom-up approach in peacebuilding because it empowers local communities to advance social change via accessible digital solutions (Ushahidi official website, no date). The platform gives an opportunity to people to raise their voices and thereby produce visual maps on crises based on the real-time data. The latter can be gathered via different digital/ communication ways such as text messages, Twitter, different web forms or emails (2021, p. 417). Such crowdsourcing platforms can demonstrate rising trends, patterns and thereby identify potential risks for early warning that might lead to early action and consequently a conflict prevention. This is a perfect example of how the development of social media and widespread use of mobile technology has allowed gathering vast amounts of information from diverse sources and thereby contributing to peacebuilding efforts. It is also important to mention that apart from violence incidents tracking, the Ushahidi platform has also been used for monitoring the elections where thousands of volunteers on the ground could report on the incidents. This can greatly facilitate the detection of potential voter

frauds, thereby establishing more accountability and identifying potential risks of political tensions (2021, p.417).

Another example of digital technologies use for peacebuilding can be crisis mapping. These platforms mostly rely on satellite imaging, GPS and GIS, and collect, analyse and demonstrate the data as interactive maps. The most famous examples of crisis maps are Armed Conflict Location & Event Data (ACLED) project and the Kivu Security Tracker or Crisis Tracker (Peace Direct, 2020). For instance, ACLED focuses on gathering dataset on internal conflicts, collecting information on the dates, actors, locations, fatalities and all types of political violence and protests around the world (Official website of ACLED, no date). At the same time, the Kivu Security Tracker is specifically allocated for tracing violent incidents in the eastern Democratic Republic of Congo (Duursma and Karlsrud, 2021, p. 417).

b) digital technologies for enhancing communication

One of the most prominent advantages of digital technologies is its capability for enhancing communication. The communication across diverse communities and countries has a strong implication for peacebuilders (Duursma and Karlsrud, 2021). Proliferation of mobile networks, as well as development of the internet facilitated the process of reaching out to conflicting sides, opposing groups and ordinary people, and consequently promote peacebuilding values. The authors argue that these technologies can be used for used for advancing awareness, creating a dialog, and as well as changing the narratives.

They can be also successfully used for mobilizing different groups and potentially creating a strong community of people who are seeking for a change and peacebuilding. This phenomenon can convey some implications to governmental

authorities and decision-makers to be more attentive towards the perspective of communities concerning particular situations. One of the best examples of this is the continuous mobilizations of millions of people around the world standing in solidarity with Ukrainians and in opposition to the war.

Another opportunity of using digital technologies for peacebuilding is to attempt to shift from conflict narratives and focus more on the shared values, commonalities, or collective well-being of conflicting sides (Peace Direct, 2020, p.14). It can be done via using digital communications for a peace narrative through peace messaging, or story telling on different social media platforms. These efforts can greatly benefit in raising people's awareness and finding way for a dialog.

c) documentation and research for effective peacebuilding

Further exploration of digital technologies' role in the peacebuilding domain demonstrates that its development made it possible not only facilitate crowdsourcing and events monitoring, but also document these incidents for informing the decision-makers, developing effective responses and establishing a knowledge base for assisting to stop the violators.
Moreover, digital technologies today are making it easier for researchers to do their polls, surveys and interviews online, when it is difficult to reach the conflict zones in person (Duursma and Karlsrud, 2021).

4.3. Potential challenges and risks of Digital Technologies to consider:

Although digital technologies are providing new opportunities for peacebuilding/peacekeeping missions, it does not imply that digital technology application in peace efforts is flawless. It still has potential risks like information leakage, inequality in expressing the voices, disinformation and online manipulation risks etc. The following section below discusses in more details these potential weaknesses and risks of digital technologies in the field of peace operations.

a) Social media

It is crucial to acknowledge the dual use of digital technologies- understand that the same technologies that are used for peace, might be also used in the wrong hands for destabilising peace operations. For example, social media might be deployed for better community engagement and promoting peace, however it can also play its role in polarisation, spreading misinformation and disinformation, recruitment into armed groups, as well as triggering further tensions and conflicts (Esberg and Mikulaschek, 2021, p.1).

Social media became a platform where people freely express their beliefs and often deliberately use it for their own interests, meanwhile the tech companies cannot delete such triggering content that quickly and easily. The same technique is used by armed groups who usually recruit new members by spreading disinformation, embellishing the life of fighters. They can also use social media for propaganda use, while reporting their victories on the battlegrounds or manipulating the information. The ISIS's use of social media in Syria can be the best example of this (Esberg and Mikulaschek, 2021, p. 2-3). These activities can escalate the conflict, enhance the resistance against peace operations and undermine the credibility of peace missions on the ground and the whole organisation.

b) Information security concerns

Meanwhile today the UN peacekeeping operations are widely using surveillance UAVs, there are still concerns over the collected data ownership and its implications for international humanitarian law (Apuuli, 2014). Who can access both the live and recorded streams for example? According to Karlsrud and Rosen, there should be an effective mechanism to guarantee that any data collected by the drones are at the exclusive possession of the UN only (2013). So, there is a need for ensuring an open, secure and accessible ICT environment in peace operations. Moreover, we still have not overcome the risks of information leaks.

3) Unequal distribution of mobile devices and the internet

We thoroughly discussed that digital technologies can be successfully used for crowdsourcing and better communication with local communities. Although it is true, one should also consider the fact that we still haven't overcome poverty and are thereby unable to distribute mobile devices and provide internet coverage to everyone in the area of conflict equally. That means that there always might be some missing in incident reports, as well as non-equal opportunities for raising local voices.

CHAPTER 5 | EMPIRICAL ANALYSIS

After facing several significant failures in a row in the mid 1990s, then UN Secretary-General Kofi Annan requested a group of experts to evaluate the shortcomings of the UN and make practical and feasible recommendations for the system. In 2000, the Report of the Panel on United Nations Peace Operations (also referred as "Brahimi Report") was released with analysis of the UN operations and recommendations that could help "the United Nations be able to meet the critical 21st century peacekeeping and peacebuilding challenges presented by its member states" (Durch et al., 2003, Executive Summary page).

In that Report, along with other recommendations, the experts already recognized the significance of "modern, well utilized information technology (IT)" in achieving the UN's goals (Brahimi Report, p.42). It urges for creating a mechanism to make more efficient communication and data sharing among the actors in peace operations and using data together with geographic information systems (GIS) to facilitate the UN peace missions (p.43). It has been 2 decades after the release of the Brahimi Report, and it is crucial to analyse what has changed since then on the strategic level of documents on digital technologies in peace operations. For this purpose, the following documents were selected for comprehensive investigation: 1) Final Report of the Expert Panel on Technology and Innovation in UN Peacekeeping (2015); 2) UN Secretary-General's Strategy on New Technologies (2018); and 3) Strategy for the Digital Transformation of UN Peacekeeping (2021).

5.1. Document Analysis

5.1.1. Final Report of the Expert Panel on Technology and Innovation in UN Peacekeeping (2015)

The Report of the Expert Panel on Technology and Innovation in UN Peacekeeping was developed to assess and understand how new technologies can benefit the UN's peacekeeping operations, specifically for improving performance of peacekeepers, enhancing security in the field and expanding an understanding on how to answer to new rising challenges in this domain.

The report starts with recognition of growing significance and omnipresence of new technologies in almost every sphere today, however it notes that the peacekeeping of the UN continues to fall considerably short (Final Report, p.3). It states:

> *"The use of modern technology to help peacekeeping missions establish and maintain situational awareness, carry out their mandates, and protect themselves is neither aspirational nor luxury. The availability and effective use of such technology represents the essential foundation—the very least that is required today—to help peacekeeping missions deploy to and manage complex crises that pose a threat to international peace and security. No mission can be expected to succeed in today's complex environments without an ability to innovate and make effective use of technology, and no advantage should be withheld from those working for the cause of peace" (Final Report, p.3)* .

For successful implementation of their mandate, the missions rely on the political support of the Security Council (SC) and the resources of the Member States. Furthermore, they also depend on the knowledge, experience, professionalism and competence of the leadership and staff on the ground, as well as on the application of new technologies that is a great help in complex conflict environments. These modern technologies are characterised by their computing power, data-storage

capacity and speed that continues to advance every year. The Internet, mobile phones with high-resolution digital cameras, different data analytic tools and other digital platforms are accelerating day by day, thereby introducing new opportunities in development and diverse operations (p. 15-16). Hence, with all of these technological possibilities and the fast-paced world, the UN peacekeeping can not allow itself to stay behind. While no one suggests that peacekeeping should be on the front of technological research and development, it is certain that it should advance at least to the present day. Considering this, the experts of the Panel conclude the following:

> *"Peacekeeping missions must deploy with at least the same technological advantages that most governments and enterprises around the globe now find operationally indispensable in today's world" (Final Report, p.16).*

The Report also indicates 6 key principles that should guide the peacekeeping and their application of new technologies:

1) Pursuing and using widely available technological solutions, meanwhile avoiding specialised and non-standard ones.
2) Focusing and prioritising mobility of mission assets, as well as IT and information mobile platforms;
3) Applying robust technologies that are easier to use on the ground.
4) Advancing the technologies to their utmost in the operations and strengthening the "supporting-supported" concept.
5) Ensuring a high level of transparency in embracing and implementing modern technologies in peacekeeping.
6) Sourcing locally or regionally when these technological capacities are not provided by the Member States (p. 21).

After defining the guiding principles, the Report dispels some common myths on technologies' application. First, it indicates that technologies might expand peacekeepers' performance and strengthen the operation, however they can not substitute human resources on the field, as many assume.

Second, it dispels the myth that introduction of modern technologies is an excuse of some Member states with particular political interests to simply operate drones, "a particularly non-transparent and intrusive technology" (p. 23). It states that Unmanned aerial systems/vehicles (UAS or UAVs) give significantly better and more effective visibility in the operation's area, and they can hardly be deemed as more intrusive than the missions themselves. The Panel recognises the significance of using UAS/UAVs in peacekeeping operations, but also indicates the need for transparency from the very beginning.

Third, it dispels the myth that the application and utilisation of modern technological tools in peacekeeping for information gathering jeopardises the principles of missions' impartiality and state sovereignty (p.23). It argues that there is no partiality in providing peacekeepers the same access to information as billions of people around the world can easily access today via the widespread internet and mobile devices. Indeed, for the implementation of their mandates, the missions must be able to quickly gather, verify and fuse the relevant information from publicly available open sources for better situational awareness, for enhancing security and supporting better decision-making.

Fourth, it indicates that it is a myth that modern technologies always come with a very high cost and they are too complex, therefore they are out of reach for most of the Member States. The Report argues that although it is true that some countries do not have resources for highly advanced technologies, it is also true that most modern technologies, including digital ones, have already become an

integral part of daily lives of the substantial number of people around the globe (p.24). Mobile phones and communication, data storage, global positioning systems (GPS) and other modern technologies are already widespread and common today.

Fifth, it dispels the myth that since in many parts of the world new technologies are considered as a sign/mark of an "outsider", they will increase potential risks to peacekeepers on the ground (p.24). The Report states that it recognises the risks and vulnerabilities of peacekeepers in the conflict area, however it also regards technologies as tools that can contribute to increasing security and safety of UN personnel in dangerous areas (p.24). Diverse sensors on the perimeter can detect intrusions and thereby along with emergency communication and other technologies enhance security and safety of peacekeepers and mission.

Sixth, the Report dispels the myth that the UN is reluctant or incapable of embracing and maintaining modern technologies in its operations. It acknowledges that the UN is still falling short in application of modern technologies, however peacekeeping has consistently demonstrated its readiness and capability to face the challenges and implement innovations in their missions. Further it provides an example of MONUSCO mission that piloted utilising the TV whitespace for the purpose of using unused TV frequency data and Internet facilitation (p.25). Finally, it also acknowledges that the culture of innovation is not widely prevalent in the UN peacekeeping, therefore it urges the need for creating one.

With consideration of all the principles and mentioned factors, the Report emphasises the necessity for strengthening and expanding modern technologies' application in peacekeeping. Therefore, it further suggests focusing on three main

areas: getting the basics right; supporting operational imperatives and streamlining mission support.

First, in the '**getting the basic rights'** section, the experts note that peacekeepers often serve in challenging environments that lack even the most fundamental infrastructure. Despite the uniqueness of each mission, there is always a significant level of shared characteristics across them. Therefore, it is essential to cover at least the very basic needs such as providing security, housing, water, energy, medical support, mobility, and connectivity/communications (p.26). Meanwhile, deployment of new technologies can greatly facilitate this process. For example, by using motion detection technologies, emergency communications, tamper-resistant real time tracking technologies on the vehicles and GPS, the UN can expand the security of peacekeepers. Mobile and internet access devices with translation softwares are a significant help if peacekeepers are lost or under a threat. Advanced geospatial imaging can be effectively used to find water (p.34), meanwhile adequate ICT support might help in providing urgent medical assistance via video and conference etc (p.43).

Second, in the '**supporting operational imperatives'** section, the Report discusses that the UN system can do much more in promoting and embracing new technologies, particularly in the field of command and control (C2), monitoring, surveillance and reporting (p. 49). High-resolution digital cameras, aerial data and geospatial information can expand situational awareness of the mission via providing important intelligence for that environmental context. The Report also acknowledges the significance of geographic information systems (GIS) that allows collecting, storing, analysing and managing a wide range of data on a geographic component, and using this data for identifying patterns and trends for developing a further course of actions (p.51).

Moreover, it also touches upon the growing need for high-resolution satellite imageries for real-time image analysis (p.52), as well as a statement that "the panel believes that unmanned aerial systems constitute an indispensable source of information and should not only remain part of the peacekeeper's toolkit, but their use should also be immediately expanded" (p.54). So, despite many suspicions towards UAVs, the experts claim that these technologies can provide effective surveillance and visualizations that are necessary for peacekeeping operations. Therefore, it recommends more systematic use of these technologies for supporting field operations. At the same time, the panel also acknowledges potential risks of data vulnerability and indicates the need for clear policies, accountability and information safety guided by privacy laws (p.50).

Further, the Report discusses opportunities provided by the digital technologies for peacekeeping operations- particularly significance of mobile and internet connectivity for better information flow. Currently, only the high-level personnel of the missions have access to smart-phones and tablets, thereby preventing access to different beneficial services to military, police, observers and civilian staff (p.59). To improve the effectiveness of peacekeepers and implementation of their mandates, this strategy should be promptly changed, and the ICT policies should be revised- these digital tools should be available to staff members regardless of their rank.

Moreover, the Panel advocates for developing a common intelligence software solution across the missions for analysis of threats and opportunities on the field (p.64). They claim that handling data (information, images and visuals, GIS data, open-source content, social media, text messages etc.) can address the problem of data incompatibility and create a foundation for practice and training across peace missions (p.64). Here it is worth to notice the JOCs' (Joint Operation Centers) -

the current operations information hub that is mandated to ensure continuous situational awareness to facilitate missions' decision-making.

Finally, the Report also indicates the necessity for big data solutions from open-source feeds for analysing the sentiments and establishing further early-warning mechanisms (p.68). Global Pulse can be the best example of that - the hub that utilises various resources such as data science, diverse digital technologies, strategic foresight and behavioral science etc., for anticipating and crisis prevention (UN Global Pulse website, no date). Furthermore, the Panel indicates the significance of cyber hygiene recommending that the UN must promptly adopt basic cyber security practices, at least encompassing maintaining records of software and hardware assets and ensuring secure configurations (p.69).

Third, in the last '**mission support'** section, the Report suggests that the UN must perceive modern technologies as "a strategic enabler for operations" in challenging environments, instead of just a set of instruments (p. 85). The departments should give priorities to the tools that promote real-time collaboration, communication, and effective information sharing. Finally, it recommends that it should continue capability building of Field Technology Operations Centres to ensure quick and swift access to technical support throughout the peacekeeping missions (p.87).

Beside focusing on the current challenges of peacekeeping and recommending technological solutions, the Report also considers long-term view and explores the ways how new technologies can facilitate peacekeeping operations over time. It suggests an approach where DPKO and DFS set an objective of equipping individual peacekeepers with modern technologies already outlined in the report within 18 months and develop a plan for training and periodic reviews - developing digital peacekeepers (p.94). Digital peacekeepers can be military,

police and civilian staff. The requirements for each of these categories might vary, but common features of all are providing them with smartphones and tables for real time information and enhanced situational awareness, tracking and geo-location technologies, emergency communications etc. Apart from the digital peacekeepers suggestion, the Panel one more time indicates the necessity of keeping the missions' data in a secure and safe cloud that's flexibly available to the leadership upon request in future (p.98).

The Report also discusses the challenges that still require addressing them while enhancing new technologies' application in peacekeeping operations. It notes that expansion of modern technologies in missions might lead to unrealistic expectations on the ability of peacekeepers deliver the results in unrealistic time frame, as well as acknowledging the need for dealing with legacy systems and need for empowering trainings/exercises for getting necessary skill sets for basic technological operations (p.p. 100-101). Finally, as one of the most important components, it indicates the necessity for building a culture of innovation at all levels of the system (p.p.104-105). It also notes that technologies alone can not strengthen the UN peacekeeping operations and technologies are by no means "a panacea", but it is time for peacekeeping missions to enhance the technological capacities to optimize their peace promoting efforts (p.110).

In summary, the Final Report of the Expert Panel on Technology and Innovation in UN Peacekeeping is an excellent examination of how modern technologies, including digital technologies, could strengthen and facilitate peacekeeping operations. While providing thorough principles that should guide technologies application in peacekeeping and dispelling common myths around the topic, the Panel focuses on three main areas: getting the basics right; supporting operational imperatives and streamlining mission support. First, in the basic rights section, it suggests that modern technologies can be effectively applied for providing basic

needs to peacekeepers such as security, housing, water, mobility and connectivity/ communications etc. Technologies such as emergency communications, real time tracking technologies and GPS, mobile and internet access devices and adequate ICT s can support this aspiration. Second, the Panel suggests that new technologies can effectively support and benefit peacekeeping operations by the help of many technologies like high-resolution digital cameras, aerial data, geographic information systems, USVs for surveillance and visualizations, as well as digital tools as mobile and internet platforms for better information flow and decision-making. Third, the Report suggests that the UN system should see new technologies not simply as a set of tools, but rather "a strategic enabler for operations" in the field. Further it indicates that the approach of expanding technological capabilities in peacekeeping should focus not only on the current realities, but should also look at the long-term perspective. Thereby it suggests equipping the peacekeepers with all the necessary technological tools and skills within 18 months, hence preparing digital peacekeepers. Finally, it discusses the challenges while expanding and integrating modern technologies in peacekeeping- the need for avoiding unrealistic expectations from technologies' support, necessity for staff trainings, and need for an innovation culture promotion within the system.

Overall, the Panel Experts advocate for wider deployment and application of new technologies for UN peacekeeping operations, including greater use of unmanned aerial systems, different digital tools and advanced data analytics for missions' ability to effectively function across its mandate. They are positive that UN peacekeeping missions should take greater advantage of current new technologies for increasing the opportunity of effective mandate fulfillment, although they also recognize potential challenges and cost of change. The Report does not see technology application as a "panacea" for peacekeeping improvement, but rather

an effective addition that can be fully integrated and used with support of Member States and change of culture aspiring for innovation.

5.1.2. UN Secretary-General's Strategy on New Technologies (2018)

The UN, along with other organisations, is acknowledging the rapid development and impact of new technologies in our daily life. Therefore, while recognizing these technologies' potential for "advancing of humans welfare", as well as "a potential to generate more inequality and more violence" (p. 4), the UN is developing this strategy to define how it can facilitate the application of new technologies to accelerate the 2030 Sustainable Development Agenda and adjust them to the values of the UN Charter. So, it indicates that this strategy is an overall guide to the entire organisation's system, not referring to only one specific area as peacekeeping/peacebuilding for instance.

In this strategy, Secretary-General António Guterres has distinguished five main principles to guide the UN's approach and engagement with technologies: 1) Protect and promote global values; 2) Foster inclusion and transparency; 3) Working in partnership; 4) Build on existing capabilities and mandates; 5) Be humble and continue to learn. A special notice here demands the fourth principle that highlights that the UN's involvement with new technologies is required for preserving the values of the UN Charter and fulfilment of the UN mandates (p.5). It is significant to highlight that along with other purposes, the central goal of the organisation is to maintain international peace and security (United Nations Charter, chapter 1). Daniel Forti also indicates that this strategy does not focus on a single substantive sector as peacekeeping (2018), however António Guterres mentions that the UN has already started playing a role in ensuring that deployment of new technologies is consistent with the organisation's values and

international norms (p.10). Along with the example that the UN has established more that 13,000 square kilometers of drone test corridor for humanitarian purposes, he also indicates that major attempts are being made to employ new technologies in peacemaking and peacekeeping operations (p.10).

The strategy highlights that most parts of the UN system have embraced new technologies, as well as the challenges produced by them. It mentions that some UN departments and agencies are already utilising robotics, machine learning (ML) and other new technologies in their missions, however it also highlights that "... certain parts of the system still function as a 20th century institution trying to solve 21st century problems." (p.13)

Therefore, the Secretary-General encourages all level initiatives that might assist to increase and strengthen understanding of new technologies and their role in supporting mandate implementation and support (p.13). So, in this respect, he highlights that the UN will continue integrating new technologies into analytical and technical components of the organisation's activities. Furthermore, in this strategy António Guterres also calls for more support of the UN Innovation Network (UNIN), specifically for making its work on new technologies such as Artificial Intelligence (AI), data and blockchain etc. (p.14). This network is planned to support innovation within the whole UN system and to advise the organisation's Chief Executives Board for Coordination on promoting and engaging the new technologies' application throughout the departments and agencies (p.14).

As Daniel Forte notes, another important emphasis of the strategy is a highlight of working in partnership and a bottom-up approach (2018). The Secretary-General indicates that successful application of new technologies requires an engagement of partners ranging from governments to private sectors, particularly considering

the latter's role in contributing towards much of the progress (p.11). So, the organisation is recognizing the impact that private companies, communities, and individuals might potentially have for new solutions and development. Although, the question if it is the development of new technologies leading towards rethinking of a bottom-up approach in the UN system (including in peace operations), or vice-versa, still leaves room for a further debate.

To sum up, the analysis of the UN Secretary-General's Strategy on New Technologies has demonstrated that this strategy is a progressive policy that recognizes and highlights the importance of new technologies' engagement throughout the UN system. The organisation is trying to embrace and enhance new technologies within all the departments and agencies as whole, not specifically focusing only on peace operations. Although the strategy does touch upon the area of peacekeeping and peacemaking, the reference to this substantive area appears modest and minimal in this document.

5.1.3. Strategy for the Digital Transformation of UN Peacekeeping

In November 2020, the Under-Secretaries-General of the Department of Peace Operations (DPO), Department of Operational Support (DOS) and Department of Management, Strategy, Policy and Compliance (DMSPC) launched the Strategy for the Digital Transformation of UN Peacekeeping (United Nations Peacekeeping, no date). The strategy's main goal is to improve peacekeepers safety and security, as well as to make the mandates' implementation more efficient and effective. The organisation recognizes current and emerging impact of new technologies and therefore aims to enhance their implementation in the field of peacekeeping to achieve better situational awareness and more effective analysis-driven understanding of the environment the mission is deployed.

The strategy is guided by twelve principles such as technologies' accessibility, data protection and privacy, demand-driven characteristic, no harm principle, gender-sensitivity, human centred approach, compliance with human rights, inclusion and transparency, multidisciplinarity, partnerships fostering, realistic expectations, and sustainability and scalability. Previously mentioned principles guided the organisation on its way of integrating new technologies for increasing security and enhancing field support (Strategy for the Digital Transformation of UN Peacekeeping, 2021, p.5).

After extensive consultations within the organisation, it developed the strategy with following primary goals in support of UN peacekeeping: 1) driving innovation; 2) maximising the potential of current and new technology; 3) understanding threats to the safety and security of peacekeepers and to mandate implementation; 4) ensuring responsible use. It highlights that with over 90,000 peacekeepers around the globe throughout the 12 UN led operations taking place, the organisation has a complex digital ecosystem with both opportunities and difficulties depending on the operations' environments, missions' size etc. (p.9). It also identifies the digital transformation as a transformation that is driven and enabled by digital technologies ("...electronic tools, systems, devices and resources that generate, capture, store or process data"), but it also recognizes that there is a need for a significant cultural change for this (p.10).

Identifying target audiences such as Mission and Headquarters staff working in and/ or supporting peacekeeping operations, member states, and UN system and external partners, the strategy discusses opportunities and risks for UN peacekeeping missions in the emerging technology environment and the strategy's implications could be extended beyond the context of peacekeeping. It addresses dual-use of new digital technologies, particularly Artificial Intelligence (AI) which was intended for positive purposes, however that can be misused for

disinformation, hate speech, mobilisation, surveillance, recruitments for armed groups and cyberattacks etc. (p.12)

Further, the strategy also recognizes the role of social media and internet platforms for increasing communication, building dialogue and community, but at the same time their capacity for incitement of different crimes, use for mobilisation and spread of disinformation. It can be exacerbated by so-called "deep fakes" that are already difficult to detect and will be almost impossible to differentiate them in near future (p.12). The concern that digital technologies will be used in the wrong hands also refers to data that conveys potential risks for abusing population's data, surveillance over people's systematic actions, patterns etc. along with the concerns over ethical questions around this field (algorithm biases, the questions of sovereignty, consent etc.) (p.13). Moreover, the strategy discusses that along with their benefits, mobile phones and Unmanned Aerial Vehicles (UAV) might be also used to attack civilians and peacekeepers, as well as the missions' facilities.

Therefore, considering all these current/potential risks of digital technologies along with their positive use, the strategy consequently states that in this fast-paced and tremendously changing, complex environment, peacekeepers need to utilise diverse skill sets and capacities like increased situational awareness, monitoring, analytics and evaluations. In today's realities, it is necessary to apply digital technologies for securing the safety of peacekeepers, however consideration of ethical implications is one of the most vital prerequisites for digital transformation (p.13). On the guiding principles for this strategy, it mentions that digital technologies are employed for the best interests and needs of people, with respect to human rights, adopting inclusivity, diversity and gender sensitivity, as well as data confidentiality and privacy standards (p. 14).

Considering all the opportunities and challenges along with the guiding principles, the strategy develops four main goals mentioned before for promoting digital transformation.

1) **Goal 1 - Driving innovation-** supports peacekeeping operations of the organisation to "continue to evolve and capitalise on technological innovation" for efficient mandate fulfillment and ensuring security (p.15). For this goal, the strategy suggests four main recommendations:

   First, developing and implementing a mechanism in the field that is supplementary to and supported by the Head Quarter based Innovation and Digital Transformation Team (it is also proposed to create this center for promoting digital innovation and monitoring the implementation of the strategy (p.24)). It will support mandate implementation with new technological solutions and be a bridge between the fields and Head Quarters to address complex issues. These field capacities will ensure more efficient communication and expanding coherence throughout the missions, as well as promoting cultural change in the system for digital transformation (p.15-16).

   Second, fostering "full leadership engagement at all levels" that will facilitate promotion of digital innovation and cultural change while raising technological awareness and shifting from "rigid adherence to traditional methods and resistance to the use of data in decision making" (p.16).

   Third, creating a multidisciplinary mechanism for examining, analysing and consulting on emerging technology issues that consequently affect peace operations (p.16). At present, the UN peacekeeping missions do not have a special capacity for constant monitoring of technologies and trends.

A creation of one would raise more technological awareness in the system and allow the opportunity to anticipate any impact of change on peace operations, as well as ensuring the consideration of technological changes in decision-making.

Fourth, finally there is a need for establishing a flexible funding mechanism for supporting this digital transformation and innovation (p.17).

2) **Goal 2- Maximising the potential of current and new technology-** supports the application and use of "current digital technologies to their full potential" and integrating them while implementing new digital technologies for supporting efficient mandate implementation (p.17). For this goal, the strategy suggests two main recommendations:

First, capacity building and training for strengthening digital skills and awareness on the application of digital technologies. The strategy states that as a practice, trainings are usually a single-time events with no organisational commitment. However, digital transformation requires comprehensive learning throughout the missions and knowledge sharing. Moreover, it is essential for protection of peacekeepers "against specific digitally-enabled threats, including IEDs or UAVs" that requires relevant equipments, in-mission trainings and partnerships (p.18).

Second, there are technical issues in peacekeeping-intelligence and risk management due to the fragmentation of databases, lack of consistency in management, storage and access of data, as well as reluctance of engaging and integrating data for extensive analysis. However, digital technology applications based on data-driven analysis can efficiently address the

persisting challenges on the field. Therefore, it recommends expanding technological solutions via consolidating ICT/data systems, incorporating information management systems, engaging local communities through mobile/offline application for comprehensive data analysis, advancing analytical tools such as AI and machine learning (example, for natural language processing or algorithms for object/activity recognition etc.), engaging additional technologies for protection (threat detection, early warning and response) and addressing the issue of unequal distribution of technologies/services to remote areas (p.19). It also suggests that some issues such as absence of enough perimeter surveillance technology might be solved via application of digital technologies, meanwhile a Casualty Tracking System would be beneficial for better awareness in the field (p.20).

3) **Goal 3- Understanding threats to the safety and security of peacekeepers and to mandate implementation-** supports early warning and promptly "addressing potential threats against civilians, peacekeepers, political processes or missions" for better implementation of the mandate (p. 20). For this goal, the strategy suggests three main recommendations:

   First, considering the rising role of digital technologies in conflict and peace operations, it is significant to expand the organisation's capacity for data analysis and reporting. In order to understand the conflict environment, it is significant to recognize that digital technologies are key for understanding the risks/threats, and there is a need to corporate additional appropriate "external and recognized data sources" (p. 20-21).

   Second, although the organisation has started testing some tools for analysing social media and other different social platforms, there is still a

need for a comprehensive strategic approach in addressing misinformation and disinformation risks. Therefore, it suggests establishing a special mechanism at HeadQuarters for working together with the fields for uncovering and analysis of disinformation and hate speech. This mechanism will be also used for guiding and advising on digital technology instruments like Rabat threshold test, media monitoring or natural language processing, as well as cultivating knowledge management throughout the missions and partnerships with technology providers (p.21).

Third, since analysis of cyberthreats is not typically integrated into the activities of peacekeeping-intelligence, there is a need to set up a cybersecurity monitoring and regular assessment of cyber threats to mitigate potential risks (p.21).

4) **Goal 4- Ensuring responsible use-** supports the "responsible use of digital technologies for peacekeeping, in line with the SG's Roadmap for Digital Cooperation, the SG's Data Strategy and Data Governance Group and the United Nations standards of conduct and in collaboration with other efforts in this area" (p.22). For this goal, the strategy recognizes the vulnerabilities of digital technologies such as ethical considerations, data privacy concerns etc, and therefore, recommends developing principles and guidelines of how digital technologies should be used in peacekeeping via collaboration with related areas.

To sum up, the analysis of the Strategy for the Digital Transformation of UN Peacekeeping demonstrates that the organisation is gradually recognising the rising role of digital technologies for peace and integrating them into peace operations. Along with the opportunities, it also recognises potential risks of the

technologies and the need for ethical considerations in their application in peace operations, therefore suggests a set of guiding principles. It is increasingly exploring the potential of digital technologies in enhancing peacekeeping efforts. However, it is significant to emphasize that the UN still encounters obstacles and hindrance with regards to the cultural aspect of the system and digital transformation needs a cultural transformation of the system as a prerequisite. It can be done via leadership engagement, cultivation of the culture of innovation, commitment and dedication for supporting the technological initiatives.

5.2. A Case Study: The Democratic Republic of Congo (DRC, the Congo)

5.2.1. Background of the conflicts/current situation

Before researching and analysing digital technologies application in peace operations in the DRC, it is crucial to provide a brief background information of the conflict and current situation in the country for comprehensive understanding and a grasp of an essential context. Since its independence on the 30th of June, 1960, the Democratic Republic of Congo (the DRC or Congo) has continuously experienced rebellions, political repressions, invasions, mutinies, revolts and ethnic wars causing intense violence, deaths and massive displacements of people.

From July 1960 to December 2010 only, the country has had 17 civil wars, the duration ranging from 23 to 2204 days (Kisangani, 2012, p. 1). The DRC is one of the largest countries in the sub-Saharan region that has been divided by armed conflicts as a result of the First and Second Congo Wars (1996-1997 and 1998-2003), as well as the Kivu conflicts in Eastern DRC since 2004 (Official website

of CADA, no date). The Kivu conflicts refer to protracted armed conflicts in the North and South Kivu provinces in the east of the country that has led to approximately 6 million deaths since 1996 and has been the scene of one of the world's longest-running conflicts (Global Conflict Tracker, 2023). More than 120 rebel groups have been engaged in the conflict in that region with CODECO armed groups in Ituri, ADF rebels, the Mai-Mai fighters and the M23 as one of the largest armed groups in the conflict (Tsongo, 2022). Currently, the Democratic Republic of the Congo's eastern region is experiencing ethnic tensions and competition over valuable resources involving Congolese government security forces, the United Nations peacekeeping troops, ethnic militias, as well as complex external interests, as main actors (Global Conflict Tracker, 2023). Moreover, the conflict intensified tensions between the DRC and Rwanda that stems from the 1994 genocide in latter, as well as the rivalry over resources and influence in Congo between Rwanda and neighboring Uganda (Bwire and Guensburg, 2022).

Consequently, the DRC's ongoing unrest and instability has been indicated as the world's one of the worst humanitarian crises by the United Nations. It is worth noting that the latter has a long-standing history of presence in the DRC. From July 1960 to June 1964, the United Nations peacekeeping marked a milestone in its history, implementing the United Nations Operation in the Congo (Opération des Nations Unies au Congo, or ONUC) with its first largest operation both in terms of size and manpower (United Nations Peacekeeping website, no date). It provided assistance when Belgium (the former colonial power) was withdrawing its troops after the DRC's independence, and helped the government restore and maintain the political independence and territorial integrity, as well as prevent clashes.

3 decades later, the UN peacekeeping got back to the DRC after the 1994 genocide in Rwanda that caused some 1.2 million Rwandese Hutus flee to the neighbouring Kivu regions of eastern DRC, formerly Zaïre, a region inhabited by ethnic Tutsis and others (United Nations Peacekeeping website, no date). Following rebels and instability led to the signing of the Lusaka Ceasefire Agreement in 1999 and establishment of the United Nations Organization Mission in the Democratic Republic of the Congo (MONUC). The mandate of the mission was to initially observe ceasefire and disengagement of forces, and later it expanded to the supervision of implementation of the Ceasefire Agreement. Since then, it is remaining in the region to implement the tasks mandated by the UN. In 2010, the Security Council renamed MONUC into the United Nations Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO) with the ongoing changes and for denoting a new phase achieved in the country.

Since then, the United Nations is implementing the MONUSCO mission that has been authorized “to use all necessary means to carry out its mandate relating, among other things, to the protection of civilians, humanitarian personnel and human rights defenders under imminent threat of physical violence and to support the Government of the DRC in its stabilization and peace consolidation efforts” (United Nations Peacekeeping, no date). As of February 2023, there have been 17753 total personnel deployed in the field including experts, troops, police, military observers, civilian staff etc.

5.2.2. Application of digital technologies by MONUC and MONUSCO

While exploring the use of modern technologies in peace operations, it is crucial to note that apart from the underexplored nature of this topic itself, peace

operations also often involve confidentiality, particularly when it concerns the deployment of specific technologies. Moreover, as practice demonstrates, technological innovations and their application is often considered as a sensitive topic (ex. UAV's deployment) sometimes raising suspicions and public concerns. This perception is also a part of the reason why it is still challenging to find substantial information on this topic.

a) Aerial Surveillance Vehicles

As it has already been mentioned, peace operations in the DRC is one of the largests and long-standing ones. Due to the changing environment and modernization, a new generation of peacekeeping is undergoing, thereby nudging new instruments, capabilities and technologies into the UN mission. History demonstrates that, as the more visible array of technological implementation, peacekeeping operations in the DRC have been applying unarmed unmanned aerial vehicles (UAVs) for more effective aerial surveillance. It is significant to mention that the Congo was also the first country where the first UAS/UAVs were used in its eastern regions in December 2013 thereby indicating a more systematic approach across the missions (Hansen, 2020). This deployment revolutionized the way UN peacekeeping operates.

As Hervé Ladsous, the former United Nations under-secretary-general for peacekeeping operations noted, the ability of providing real-time pictures of the environment gave an opportunity to expand better security of peacekeepers and protection of civilians (Tafirenyika, 2016). They help get prior warning on impending attack and hence respond with better speed and decisiveness. For

example, by the help of a peacekeeping drone, a capsized boat has been detected on Lake Kivu that allowed to save 16 people from drowning.

According to Dorn and Giardullo, back in 2013, the UN's "eyes-in-the-sky" efficiently helped the mission while conducting a peace enforcement operation against the M23 armed group in eastern Congo (2020, p.92). The M23 is one of the most prominent rebel groups consisting primarily of Tutsis rebels that became especially strong between 2012-2013 in eastern DRC. They had been attacking the villages and cities for years and the high-power digital cameras of the UAV's and helicopters helped detecting the group's location before neutralising them. According to Apuuli, the declaration of the UAV's application itself consequently helped the UN mission successfully launch a military offensive against the M23 group. The main reason for that was that the neighbouring Rwanda and Uganda, the suspected supporters of the M23 rebels, withheld from intervening due to hesitations that they might be discovered by the peacekeeping mission's UAV's (2014). So, thereby it is fair to observe that these technologies can be used not only for information gathering and better situational awareness, but also as a powerful deterring force by itself while sending the warning message to the actors (Andrews, 2017, p. 5).

However, it is also significant to note that application of drones in peacekeeping operations were followed with concerns due to the topic's sensitivity resulting from ongoing use of armed UAS's in Pakistan, Afghanistan and Somalia (Apuuli, 2014). Although the peacekeepers declared that these unarmed technologies with cameras would be used only for situational awareness purposes, some regional countries like Rwanda opposed this intention indicating that "Africa should not become a laboratory for intelligence devices from overseas" (2014). Although some other countries such as China, Russia, Pakistan etc. also raised their

concerns, the ultimate consensus was reached for UAV's application for promoting peace and security.

b) Digital technologies for peacebuilding

Apart from the peacekeeping operations, digital technologies application in DRC can be traced in peacebuilding efforts. For example, according to Karlsrud, MONUSCO has established local community networks and distributed mobile phones for information gathering in Congo (2015, p. 44). Such practices have been also implemented in Haiti and Libya, aiming for a more bottom-up approach with crowd-source information on human-rights violations and humanitarian information. As the author notices, there is "a trend of decentralising authority, feeding intelligence into operations on local levels, using a combination of human and signal intelligence sources such as drones, and including special forces to support more conventional forces" (2015, p.44).

Besides the crowdsourcing approach, MONUSCO is currently using digital technologies to fight disinformation and manipulation campaigns that are often used as a weapon of war to weaken peace efforts. For example, the mission is supporting training in Kinshasa on the production of digital content with the help of mobile smart phones. In June 2023, 30 young people were trained in detecting false information on social networks, fact-checking and content production on smartphones with editing softwares. The efforts are targeted to build capacities against fake news and attempt to reach a larger number of the population by spreading credible/objective information (Zigbia-Tayoro, 2023). Since disinformation and manipulation can trigger further tensions and violence, building a "digital army" combating misinformation and disinformation can be a powerful factor in diminishing further risks of escalations.

From 20 to 30 March 2023, MONUSCO and United Nations system entities organized a “digital forum” in Kinshasa to promote the use of digital technologies to advance the process of promoting gender equality, preventing gender-based violence, advancing women’s leadership and their involvement in political and economic domains. The forum included around 2,000 participants with more than 80% of which were women (United Nations Digital Library, 2023). It is a noteworthy effort in peacebuilding since women’s participation and involvement in decision-making can lead to more conflict prevention and more sustainable solutions, meanwhile modern digital technologies can be a great platform for underrepresented groups like women, as well as a platform for providing educational resources to them.

It is worth to note that apart from providing training for civilian youths and women with the purpose of promoting sustainable peace, the MONUSCO is also continuously involved in training the military force too. For example, in September 2017 they launched a 8 Weeks of English and Computer program for 10 FARDC Officials of Operation Sokola 2 in HIBI in the outskirts of Goma (MONUSCO, 2017). The FARDC stands for Armed Forces of the Democratic Republic of the Congo (Forces armées de la république démocratique du Congo). By providing the skills of English language, basic understanding of computer software and hardware, and Military and Security Communication with the computer, the mission aims for more effective interaction and coordination in military operations (2017). Advanced digital and computer awareness/literacy of the military can play a significant role in modern peace operations due to the increased capacity building, better communication and overall efficiency of personnel on the ground.

Apart from the activities of MONUSCO peacekeeping mission, there are also other organisations being a part of the peace promotion in the DRC. For example, one of the most prominent examples of local projects dedicated for peacebuilding efforts is the Kivu Security Tracker that traces violence by state security forces and armed groups in eastern Democratic Republic of Congo (Official website of Kivu Security Tracker, no date). It does not relate to the activities of MONUSCO mission or any other UN agency/department, but it is a joint project of the Congo Research Group, based at New York University's Center on International Cooperation and Human Rights Watch. The data is provided by a network of trained researchers based throughout Ituri, North Kivu and South Kivu provinces in eastern DRC and later it is verified with other numerous sources before being published. Via looking both in the context of political violence and armed conflicts, the tracker records the incidents like clashes, violent deaths, abductions, rapes, property destructions etc. (Kivu Security Tracker, no date). This helps better understand the conflict, its patterns, document different types of violations and consequently use these data for early warning. Moreover, tracking and documenting human rights abuses have a strong implication for peacebuilding efforts - it helps inform policy and decision-makers and consequently develop better responses. Moreover, it can help in establishing the knowledge base for stopping the violators.

5.3. Main Findings of the Document Analysis and the Case Study

The analysis of the selected documents and the case study of DRC revealed several main findings.

1) First, via establishing guiding principles and objectives, the UN is strategically aspiring for expanding innovations and technological changes within the whole UN system. These attempts can be particularly traced in the UN Secretary-General's Strategy on New Technologies, 2018 that acknowledges the opportunities and impact of modern technologies in today's realities and therefore urges for the system's embracement of new technologies throughout the UN system. It clearly states that *"... certain parts of the system still function as a 20th century institution trying to solve 21st century problems"* (p.13), thereby advocating for enhancing new technologies within all the departments/agencies including peace missions on the ground. Although the strategy provides an understanding of the strategic attempts of the UN for innovations and technology-friendly culture of the system, its reference to peace operations appeared quite modest. However, the statements advocating for advancement of technologies (including digital ones) within the whole system of the organisation signals the need for a cultural transformation of the whole UN first to transform digitally, consequently including peace operations. And it is still a matter of discussion if the UN has already stepped into the 21st century solutions since then.

2) Second, contrasting the UN Secretary-General's Strategy on New Technologies, the Final Report of the Expert Panel on Technology and Innovation in UN Peacekeeping, 2015 was specifically dedicated to assessing modern technologies' benefits to UN's peacekeeping operations. It focused on analysing and recommending the ways technologies can contribute to improving the performance of peacekeepers, enhancing their security and expanding an understanding on how to answer to new rising challenges. Although the experts of the Panel advocated for wider

application of all types of modern technologies that can potentially enhance peace operation efforts, it also specifically indicated the need for immediate increasing of aerial surveillance systems for better situational awareness as part of the peacekeeper's toolkit. The case study of the DRC has demonstrated the alignment between the intentions/recommendations within the document with real practical implementation on the ground. Aerial surveillance vehicles have indeed become a common technology assisting peacekeeping missions in monitoring, information gathering, getting better situational awareness, protecting civilians and as a deterring force (even if the last is unintentionally). The peacekeeping mission in the DRC is indeed widely utilising digital technologies for better communication within the forces, real time tracking and for better local communication network, however digital technologies application is not as widely traced in real case study compared to the strategic document suggestions. It might suggest that peacekeeping missions have been rather slow in adopting new technologies in reality in contrast to recommendations on the strategic level.

3) Third, the strategic analysis demonstrated the UN's aspiration for digital transformation of its peacekeeping missions/operations. Although the last document's, the Strategy for the Digital Transformation of UN Peacekeeping's most recommendations did not find themselves implemented in reality, at least in the context of the DRC missions, there are indeed some changes taking place. For example, the case study has demonstrated the mission's efforts in engaging local communities through mobile/offline applications, using digital technologies against hate speech and disinformation, as well as attempts for capacity building and training for strengthening digital skills. However, it is still a matter of discussion

whether these training courses are comprehensive, or rather single-time events with no organisational commitment.

4) Fourth, the strategic analysis has depicted the UN's more focus on peacekeeping efforts while deploying modern digital technologies. However, the case study of the DRC demonstrated more evidence supporting MONUSCO's embracement of digital technologies for long-term sustainable peacebuilding, except the application of aerial surveillance systems in peacekeeping operations. But the use of digital technologies in MONUSCO is still relatively modest limited to UAV's, trainings and capacity buildings attempts.

5) Finally, the overall empirical study has demonstrated a clear mismatch between strategies/documents and current practices in UN peacekeeping, particularly in the context of peace operations in the DRC. Although there is an apparent willingness of the UN to integrate more digital technological tools in its peace operations, the reality demonstrates that the organisation is still slow in adopting and integrating them. This non-alignment can be explained by the need for a cultural transformation of the UN as a prerequisite and the need for cultivating a culture of innovation within the whole system. The traditional peace operation models are still highly relevant in the context of UN missions, and the technological capabilities are being used only as a supplementary help.

CHAPTER 6 | CONCLUSION

Widespread use of mobile devices, significant development of the internet, social media usage and other digital advancements have profoundly changed the world today, influencing almost every domain, impacting the way people interact, increasing the speed and pace of the world and expanding operational capabilities in different spheres. The numerous prospects and opportunities provided by these modern technologies make it understandable why various organisations from different fields are willing to integrate and utilise them in their activities, and peacekeeping/peacebuilding organisations were not immune from these attempts. But what is digital technology in the first place? How are these technologies being deployed for peace efforts? Are there any limitations and challenges to consider in modern technologies? And finally, considering wider application of technologies by peacekeeping/peacebuilding missions, are digital technologies making traditional peace operation models obsolete? The latter is the central question around which this comprehensive research was conducted.

The research on digital technologies application in peace operations are still underway, thereby literature on this topic was rather limited. This factor led to the main objective of this dissertation- contribution towards the existing knowledge and information gap regarding the application of digital technologies in peace operations, attempting to understand how their application is potentially changing the models of peace operations, and making further exploration of the underexplored topic in the academic field.

As it has already been mentioned, the main limitation of the research was its relative newness in academia. Moreover, due to the understudied nature of the topic, there is a tendency of widening the concepts in the literature, thereby

making it challenging to narrow and analyse focusing only one particular type of digital technology. Therefore, acknowledging this limitation, the research intentionally used broad concepts such as “peace operations” and “digital technologies”. Although one might argue that it makes the research vague, wider concepts offered more flexibility in the context of this paper and the underexplored domain.

The conceptual framework demonstrated that under peace operations the research implied both peacekeeping and peacebuilding efforts, meanwhile depicting that the term “digital technologies” is vague itself and might convey broad types of modern technologies such as drones, AI, machines learning, social media, smartphones etc. Since the current research did not involve any human participation, and conveyed the research methods that rely on publicly available secondary data with no confidentiality concerns, ethical concerns were mitigated in the context of this paper.

The literature base suggested the gaps in knowledge/information on this topic thereby urging for a need for further exploration. It substantially aligned with the research’s initial hypothesis that digital technologies had a significant impact on the traditional peace operation practices, changing the way they are conducted by encouraging a more bottom-up approach to peacebuilding, as well as expanding intelligence gathering practices for better situational awareness in peacekeeping.

Via a qualitative methodology conveying document analysis and a case study of the Democratic Republic of Congo (DRC), the thesis tried to answer the addressed central question if digital technologies are making traditional peace operations’ models obsolete. For this purpose, it used the following techniques via dividing the methodology in 2 sections: 1) analysing documents on technologies application in UN peace operations and looking at the topic via strategic lenses; 2)

then using a case study of the DRC to contextualise and study the environment these digital technologies are used. Documents might be rather aspirational and somewhat far from reality, therefore a case study was needed for more credibility of the research, as well as for exploring the application of modern technologies in real cases.

Further general research of the topic demonstrated that digital technologies provide tremendous range of opportunities for peace efforts, both for peacekeeping and peacebuilding. Application of surveillance aerial vehicles opened new possibilities such as increasing the speed and efficiency of the missions, enhancing situational awareness, advancing monitoring capabilities for early warning and expanding safety and security of peacekeepers on the ground. Acknowledging these opportunities, the UN peace missions are widely using drones in their operations, as well as other regional organisations such as the OSCE and EU monitoring missions that deploy surveillance UAVs in Ukraine and Georgia. These modern technologies play an important role in watching trans-border activities of armed groups, monitoring illicit arms trades, refugee camps and IDPs settlements, observing the damage of infrastructure, environmental problems, and documenting human rights violations etc. Although drone capabilities were initially (currently too) used for gathering information/intelligence in the field, new technological developments are suggesting that they might be also used for delivering light-weight humanitarian aid, as well as extending WiFi connectivity or cell phone signals to the region they operate.

The same level of advantages for peacekeeping can be traced in satellite and geospatial imageries that proved to be useful in boundary demarcations, support for the negotiation and implementation of ceasefires, humanitarian assistance etc,

meanwhile social media is mainly used for getting real-time insights on public opinion, as well as for facilitating information-sharing, coordination and monitoring and capacity building. There are other possibilities for modernized peace operations such as data analysis, application of AI and machine learning, but their use appears to be minimal in the context of today's peace organisations and their capabilities.

At the same time, digital technologies in peacebuilding were mainly deployed for early warning and raising voices, enhancing communication, and for documentation and research. Although digital technologies' application in peacebuilding is even less explored compared to peacekeeping, there are still some evidence suggesting that digital technologies can play a considerable role in supporting peacebuilding activities.

Establishment of different open-source platforms that employ crowdsourcing techniques can be the best example of digital technologies use in peacebuilding. One of the most popular instances of it is the Ushahidi platform that gathers the data and monitor violence incidents in Kenya since 2008. It can produce real-time visual maps on crises and give an opportunity to people to raise their voices. It is a great example of empowering local communities for change and peace, via digital solutions, thereby promoting a bottom-up approach in peacebuilding. Moreover, such platforms can also serve for monitoring elections, reporting the voter fraud efforts and expanding accountability.

The research also demonstrates that digital technologies can be effectively used for enhancing communication across diverse communities, opposing groups or countries. Mass use of the internet is making it easier to reach out to local people and promote peacebuilding values, rather than limiting it to governmental officers

as it has been practiced before. Moreover, digital technologies can play an important role in expanding people's awareness, changing the narratives and building a dialog between the conflicting sides, as well as in mobilising people united under the objective of peace.

Similarly, digital technologies can be used for documentation and research. The crowdsourcing and mapping platforms can be used not only in monitoring, but documenting human rights abuses, or violence incidence for developing effective response in future, informing the decision-makers and helping to stop potential violators based on this knowledge base.

Although there are numerous advantages of digital technologies for peace, it is worth acknowledging that they have their own challenges and potential risks to consider. There is still unequal distribution of digital technologies among the population for crowdsourcing, a danger of information leakage, concerns over the collected data ownership, and dual-use nature of digital technologies. The latter has a particular significance, since widespread social media can be used both for peace, but in the wrong hands for destabilisation via disinformation and manipulation.

After exploring the general use of digital technologies in peace operations, the research tried to find an answer to the main research question- if digital technologies are making traditional peace operation models obsolete. Document analysis of following 3 documents:

1) Final Report of the Expert Panel on Technology, and Innovation in UN Peacekeeping (2015);

2) UN Secretary-General's Strategy on New Technologies (September, 2018);

3) Strategy for the Digital Transformation of UN Peacekeeping (August, 2021),

demonstrated that there is a gradual acknowledgment of the growing significance of digital technologies in promoting peace within the UN. The organization is making efforts to incorporate these technologies into its missions and enhance peacekeeping initiatives. However, these changes are noticeably slow. Despite the growing acknowledgement of the need for digital technologies for peace operations and overall efforts for digital transformation/broad recommendations, the UN still struggles to fully integrate and use their full potential for peacekeeping/peacebuilding. Today's digital technologies have a transformative effect, but organisational constraints, systemic culture in the UN and systemic resistance for innovations change impede and hinder faster transformation.

A case study of the DRC also demonstrated that there is not sufficient evidence showing drastic changes in traditional models in peace operations. MONUSCO has indeed expanded its application of aerial surveillance systems in peacekeeping operations, like many other peacekeeping missions. It acknowledges the significance of local communities and capacity building in peacebuilding efforts. Therefore, it is engaging youths in trainings teaching how to fight disinformation and misinformation, organising forums for promoting the use of digital technologies to advance the process of enhancing gender equality and advancing women's leadership. It also acknowledges importance of capacity building; therefore it is also organising English and Computer program for 10 FARDC Officials, the mission tries to advance effective interaction and coordination in military operations, increase capacity building and overall efficiency of personnel on the ground. It signals the attempts of the mission of embracing digital technologies for long-term sustainable peacebuilding, however the examples were insufficient to assert that there are substantial changes in peace operation models. The empirical analysis suggested that there is a clear non-alignment between the

strategic discourse and reality. Digital technologies are rather a supplementary dimension in peace operations that can expand the missions' capabilities and effectiveness, however it is still very early to assert that they are making the traditional peace operation models obsolete. Digital technologies have impacted the understanding of expanding peace operations capabilities by their help, but the nature of peace operation models remain considerably the same.

While the initial hypothesis of the paper contended that digital technologies had a significant impact on the traditional peace operation practices via making them irrelevant in the context of new complex environments, the analysed study did not fully support this expectation. Indeed, it has demonstrated that modern technologies, particularly digital ones, are encouraging more engagement of local population and a bottom-up approach to peacebuilding, as well as enhancing the potential for application of information gathering for better situational awareness. However, digital technologies advancement is only a supplementary dimension in peace operations that is increasing the capabilities and effectiveness of the missions. It is undeniable that they do play an important role in shaping the nature of conflicts and modern peace operations, and they are a valuable complement to peace missions. It is important to acknowledge that presently they are not making the traditional models outdated/obsolete - rather they get along and coexist at this stage, and but they are by no means a substitute for traditional models. The considerable optimistic tones regarding the opportunities provided by the use of modern technologies to revolutionise the ways peace operations are conducted, are not a reality yet, but it is undeniable that there are some prospects of it in the future. Development and engagement of more mobile phones, geospatial technologies, social media platforms and aerial surveillance technologies have the potential of fundamentally changing the peace operation practices in near future.

Finally, the research has demonstrated the need for further research on this domain, both in academia and policy, reflecting on the digital technologies application and developments on the ground in peace operations. Technological advancements are constantly evolving, therefore there is also a need for consistency of these explorations for staying up-to-date. And the research is needed both in academia and policy.

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