

**HOW CAN THE DEFENCE FORCES EFFECTIVELY HORIZON SCAN FOR
EMERGING THREATS TO THE STATE?**

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31 May 2022

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STUDENT DECLARATION

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ACKNOWLEDGEMENTS

I wish to express my sincerest gratitude to my thesis supervisor, Dr. Laura Servilan Brown, whose consistent guidance, direction and encouragement provided me with the inspiration to navigate this process. Equally, I would like to express my sincerest gratitude to my military advisor, Comdt Patrick Sheahan of the Command and Staff School, for his humour, constant support, valued advice and helping me believe in the value and worth of this thesis. I would also like to thank the staff and instructors of the Command and Staff School, and Maynooth University, who provided constant support throughout this process. I would also like to express my sincere thanks to everyone whose friendship, support and guidance, allowed me to complete this thesis.

I wish to acknowledge and express my appreciation for the students of the 4th JCSC, from whom I really have learnt so much. Thank you for the support and friendship over the course of the last nine months. I hope we will all cross paths again in our professional and personal lives. I am grateful to have shared this journey with all of you and look forward to applying what we have learned collaboratively at home and overseas.

Finally, I'd like to acknowledge and express my gratitude to my parents Catherine and Brian for their lifetime of hard work and investment in me that continues to this day. They were instrumental in encouraging and supporting my entry into the Defence Forces as a cadet back in 1996 and it has been an extraordinary career in which they have always supported me in. My four siblings – Noel, Maria, Michael and George – have all been supportive over the years aswell and I'd like to thank them also.

ABSTRACT

(Thesis word count: 14,788)

Complexities and uncertainties associated with operating in today's global environment demand enhanced State means, to address current and future security and defence challenges. Recent global events demonstrate the fragility of global security and the vulnerabilities of states to a plethora of both extant and emerging threats. In Ireland's case, there is a growing realisation that previously held perceptions and assumptions, concerning national security and defence, lack continued validity. A paradigm shift in strategic thinking is required, accompanied by a willingness amongst senior decision makers, strategic planners and analysts, to embrace novel practice. A comprehensive and systematic exploration of complexity, uncertainty, and emerging trends will enhance national foresight, or our forward-looking ability. Horizon Scanning offers this necessary means to key planners and decision makers at the strategic level.

The Defence Forces, as a key agent for national security and defence, has a central role, and must enhance its relevance, preparedness, and readiness, in the face of such threats. Employment of an effective Horizon-Scanning model is crucial to that role. This study assesses the feasibility of implementing Horizon Scanning as a key component of strategic planning, and proposes a practical model for use by the Defence Forces. The Cynefin framework was used as a tool to both enhance understanding of this new model, and prove its utility.

The Horizon Scanning model, was also measured against Defence Forces' organisational, and purposeful, context. This latter research confirmed that continuous information, harvested from the process, iteratively informs: strategic planning; capability development; research, technology & innovation; generic capability; policy development concerning Irish neutrality; strategic shock warning; and, intelligence. Horizon Scanning provides Ireland a capability to detect new and emerging threats, must be considered key to the strategic planner, and facilitates provision of a flexible and adaptive security and defence framework, required for Ireland today and into the future.

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LIST OF ACRONYMS

CODF	Commission on the Defence Forces (Ireland)
COVID-19	Coronavirus Disease 2019
CSDP	Common Defence and Security Policy
DEMA	Danish Emergency Management Agency (Denmark)
DFDM	Defence Forces Doctrine Manual
DOD	Department of Defence (Ireland)
EU	European Union
J2	Directorate of Intelligence Branch (Irish Defence Forces)
MOD	Ministry of Defence (UK)
NRA	National Risk Assessment
OECD	Organisation for Economic Co-operation and Development
RAHS	Risk Assessment and Horizon Scanning (Singapore)
RTI	Research, Technology and Innovation
SARS	Severe Acute Respiratory Syndrome
SPB	Strategic Planning Branch (Irish Defence Forces)
SPF	Strategic Policy Framework (Australia)
SME	Subject Matter Expert
UNDP	United Nation Development Programme

THESIS INTRODUCTION

Introduction

In the current contemporary operating environment of the global geopolitical landscape, Ireland must be prepared to respond to a wide ranging and varied palette of threats. This ultimately means developing a capability to identify and assess the threats to the state that are likely to manifest in the near, mid and long term. As the primary agency for national security and defence, the Defence Forces has a role to play and must enhance its relevance and readiness in the face of such threats. As the Defence Forces moves out of the Consolidate phase to the Enhance and Evolve phases of its strategic planning framework, it becomes critical for the Defence Forces to acquire a greater understanding of the threats and challenges Ireland will face in the future and how, consequently, the assigned tasks from government may evolve. In the broader context, the Defence Forces must consider the greatest emerging threats to international peace and security. This will provide context and facilitate identifying the likely threats to our own national defence and security. The Defence Forces needs to be ready for all future tasks from government while possessing the required capability to counter both established and emergent threats to the state. Therefore, the Defence Forces will need to adapt, to deliver effective security to the state and be in a position to meet all designated taskings from Government.

Therefore, the Defence Forces would benefit from a decision-making model that could anticipate future threats in order to identify the requirements of operating in the future security environment. Such an analytical framework is essential to comprehensively coordinate efforts and resources in planning for future events with horizon scanning providing the optimum method to identify emerging threats. Connery (2003, p.11) proposes “horizon scanning as an additional analytic method that is arguably essential to future-oriented thinking about ... national security challenges”. A hypothesis of this research is that horizon scanning as an analytic method would be appropriate for the Irish Defence Forces in identifying early signals of emerging threats and thereby facilitate better planning and developing capability for the future accordingly. Furthermore, it would provide senior military decision makers with integrated information to plan, procure, resource and train appropriately to prepare for potential emergent threats. The

aim then of this thesis is to explore how the Defence Forces can effectively horizon scan for emerging threats to the state and to further investigate the value of an horizon scanning method within the Defence Forces.

Literature Overview

The scope of the literature on horizon scanning ranges from environment and ecology to business and marketing to public administration and governance. This thesis is concerned with defence and security issues and a number of key texts were identified in the research of this topic. An overview of three such texts is given here. The first is an article titled “Horizon Scanning: Enhancing Strategic Insight for National Security Policymaking” by David Connery. Connery developed his article in 2013, while a Deputy Director (Strategy and Development) at the Australian National University’s National Security College, in response to the Australian Government’s stated intention to develop a comprehensive Strategic Policy Framework (SPF). While, this framework comprehensively coordinates and guides efforts and resource allocations across Australia’s national security community, Connery believed that one essential element was missing – horizon scanning. According to Connery (2003, p.14) “horizon scanning is a deliberate or purposeful strategic planning activity where emerging changes and developments are analysed to identify events, trends and drivers (collectively, ‘factors’) that may shape an organisation’s future operating environment and so its policy, research and strategic agendas.” Connery (2003, p.15) contends that “horizon scanning is best used as part of an ongoing strategic planning process, or as a way to obtain insights into plausible factors that might influence decisions with long-term consequences.” He goes on to propose two contrasting options for a horizon scanning model with one based on a ‘Whole-of-Government’ approach and another as a bespoke model with a ‘laser focus.’ Connery’s article succinctly sets out the case for including a horizon scanning method with Australia’s evolving Strategic Policy Framework.

The second article is an innovation tool-kit manual for horizon scanning by Kate Delaney. Delaney is a senior consultant on strategy and foresight with extensive experience in the Canadian Government and as a consultant in Australia and New Zealand. She compiled this practical guide as an introduction to horizon scanning for public sector entities. Delaney (2014) outlines the utility of horizon scanning processes in assisting decision

makers in formulating policy in preparing for future shocks and disruptions. She suggests good practice in identifying emergent threats through horizon scanning processes, including techniques such as desk top research, use of specialist and expert focus groups, and the use of web-assisted horizon scanning. Once emerging threats have been detected through this process of horizon scanning, they need to be analysed and then communicated to the appropriate stakeholders. Delaney cites successful applications of horizon scanning from various states, such as the United Kingdom, the United States, Finland and Singapore.

H. Igor Ansoff was a renowned applied mathematician and business manager and the distinguished Justin Potter professor at Vanderbilt University when he wrote his seminal article “Managing strategic surprise by response to weak signals.” Although the article’s study of strategic surprise is in a business and corporate context, Ansoff (1975, p.21) initially frames it in a military context highlighting the paradox of strategic military surprise. The paradox being that despite ample information about enemy intentions, the attack still usually comes as a surprise. Ansoff (1975, p. 23) goes on to explain the nature of strategic surprise and that the first step is to “explore the range of weak signals that can be typically expected from a strategic discontinuity”. In other words, to horizon scan for emerging threats across a given time horizon. Ansoff (1975, p.27) further purports, that if senior decision makers are “receptive to weak signals, much can be done long before the threat becomes tangible and concrete”. Despite the article being written almost half a century ago, it succinctly captures the essence of strategic surprise and how strategic planning as a discipline is unable to “handle quickly and efficiently fast-developing threats.” Ansoff notes existing process as primed to respond to strong signals when an earlier response to weak signals is required to manage strategic surprise. Horizon scanning manages the weak signals of nascent or emerging threats, and is the missing ingredient in overcoming a basic shortcoming of strategic planning.

Research Lacunae

Having critically examined what has already been written in the literature on horizon scanning, it is apparent that a number of lacunae exist. Firstly, while there is much written about horizon scanning for emerging threats from a public administration and governance perspective, there is a paucity of research dealing with how militaries can contribute to

making their nations and societies more resilient, through horizon scanning and other strategic foresight techniques. Secondly, there is little written about how this may be achieved. In a military context, strategic planning is based on a number of components including intelligence gathering. This intelligence gathering function rarely incorporates horizon scanning and is more comfortable dealing with tangible strong signals and sources of intelligence. When it comes to weak signals of more complex emerging threats, it will apply retrospective coherence after the event in an attempt to warn of similar future events.

Retrospective coherence is insufficient in predicting or forecasting the type of threats that we will face in the future. In the ever-changing global threat environment of the 21st century, it is essential that states make more sense of an ever-evolving complex array of emergent threats. Snowden (2002, p.14) refers to “the phenomenon of retrospective coherence in which the current state of affairs always makes logical sense, but only when we look backwards.” However, UNDP (2015, p.12) cautions that “[p]racticising retrospective coherence presents the danger of making decisions for the future based on lessons of history that may not apply in similar situations.” That organisation (2015, p.11) highlights that black swan events are “often inappropriately rationalised after the fact with the benefit of hindsight” and “this tendency to see coherence can obscure future threats.” UNDP (2018, p.8) accepts that “most things we think we know about the future tends to be extrapolation of current trends, which is based on past data” and therefore “we should not just be looking at the rear-mirror when driving forward.” Retrospective coherence makes sense of past events. However, it fails to recognise by corollary that a number of alternative scenarios are equally logical and could just as easily manifest. This highlights the need for horizon scanning that includes a sense-making tool to identify emerging threats and their potential impacts.

Application of retrospective coherence to the circumstances of the COVID-19 pandemic will not adequately warn us of the next infectious black swan event. States must look to the horizon and make sense of those weak signals of emerging threats, they find. Our collective lack of understanding, concerning the complexity of emerging threats, negatively impact our ability to protect against future black-swan type events. This research explores how the complexity of emerging threats may be better understood through horizon scanning, so as to enable better preparation for future shocks.

Research Questions

This research proposes the overarching research question: How can the Defence Forces effectively horizon scan for emerging threats to the state? The principle aim of this research project is, to identify and develop a conceptual framework model, as a mechanism for the early identification of future threats to the defence and security of the State, and facilitate Defence Forces tailoring of its strategic-planning and capability-development processes. For this purpose, the study posits three questions. Firstly, how, and to what extent, can horizon scanning be employed to identify emerging threats in an Irish context? Secondly, how can a conceptual framework model for horizon scanning be developed, that is fit for use by the Defence Forces? Thirdly, how can information harvested from horizon scanning inform Defence Forces' strategic planning?

Sources to be used

Policy and Strategy documents, such as *The White Paper on Defence* (DOD, 2015) and the *Department of Defence and Defence Forces Strategy Statement 2021–2023* (DOD, 2021) informs concerning context, environment, and roles assigned by Government to the Defence Forces. The Defence Forces Strategic Planning Framework advises how horizon scanning may 'plug in' as a collaborative tool in the strategic planning process. A document analysis of other militaries' doctrine on decision-making processes, horizon-scanning techniques and future planning also enriches understanding, and offers insight on how these systems might work in an Irish Defence Forces' context. Doctrine from other States on the future of command and control, and the employment of forward-looking cells, also provided examples of international good practice.

Outline methodology

A qualitative research approach has been adopted for this thesis. The research methodology employed was two-step, with an adaptive Systematic Literature Review (SLR) and a document analysis of international military doctrine. The first step was conducted using a SLR based on carefully crafted criteria. SLR is most appropriate for this research study because it is "both theoretically sound and methodologically rigorous as well as relevant to the practitioner community"; in this case the military (Tranfield et al., 2003, p.212). SLR was chosen over a traditional or narrative review as traditional

reviews are prone to the bias of the researcher, who may subconsciously end up “ignoring research that points the other way (Synder, 2019, p. 333).” The second step was conducted using a document analysis of other militaries’ doctrine on decision-making processes, horizon-scanning techniques and future-planning processes. Selection of documents for analysis was informed by the findings and the themes identified from the Systematic Literature Review.

Outline of Chapters

The first chapter explores just what is meant by ‘horizon scanning’, how horizon scanning can be employed in an Irish context, and to what extent it is useful in identifying emerging threats today and in the near-, to mid-, to long-term futures.

The second chapter focuses on a conceptual framework model that includes a horizon-scanning method, one that adequately scans for early signals of new and emerging threats. The related process is identified as having to include a sense-making tool that informs the decision process for future planning.

The third chapter focuses on the benefits of horizon scanning to the Defence Forces, and how continuous information harvested from the process can iteratively inform capability development, structural reorganisation, resource allocation, training needs, and strategic planning into the future.

CHAPTER ONE – WHY HORIZON SCANNING?

Introduction

General Joseph Dunford, a former Chairman of the US Joint Chiefs of Staff, addresses the question of condensed decision making in a more unpredictable global world:

The speed of war has changed, and the nature of these changes makes the global security environment even more unpredictable, dangerous and unforgiving. Decision space has collapsed and so our processes must adapt to keep pace with the speed of war. (Harris, Brown, Scott & Berry, 2018)

General Dunford presents a stark warning to policy makers and senior decision makers, and identifies the challenge for states to keep pace with this increasingly compressed decision-making space. One way for decision making processes to adapt to this pace, is to be pre-emptive. In other words, states must attempt to anticipate the likely decision before the arrival of the decision point. Horizon scanning is one technique which may be utilized to achieve this; Connery (2003, p.29) asserts that horizon scanning for national security planning purposes is valuable as it provides senior officials with, “space to think expansively about the future and be less reactive to events.” This research puts forward the hypothesis that horizon scanning is the most appropriate tool for addressing the future security challenge identified by Dunford. It also explores the current global threat environment, to give an appreciation of the threats Ireland is likely to face in the coming decade and beyond. This chapter further explores horizon scanning, how it can be employed in an Irish context, and to what extent it is useful in identifying emerging threats to Ireland.

Why Horizon Scanning?

When considering the panoply of foresight techniques to identify emerging threats and hazards, it is important to look at good practice internationally, to assess what works well. Hadeed and Sus (2020, p.435) suggest that, “Scenario approaches and other techniques of foresight studies such as wargaming, trend analysis, visioning, design futures, or horizon scanning have been gaining interest across the world over the last few decades”. Such techniques have been found to produce useable data. Hadeed and Sus (2020, p.437) further also note that, “Horizon scanning produces possible scenarios, visioning and backcasting produce preferable scenarios, and scenario analysis...produces plausible

scenarios.” Horizon scanning is the foresight technique that systematically harvests all possibilities; plausible and preferable scenarios are essentially subsets of all possible scenarios. Marsh et al. (2014) and Rowe et al. (2017) support this idea, noting that horizon scanning’s, “true value lies in enhancing the ‘cognitive ability’ of planners by extending long-term thinking and exploring future developments”, supports such hypothesis.

Omand (2021, p.7) notes that both “the US and UK governments have horizon-scanning capability and deep scientific resources that can be engaged in establishing which possible events might have the most concerning combination of assessed likelihood and vulnerability in society.” While Ireland lacks the resources of such larger states, a horizon-scanning capability should not be beyond Ireland’s ambition. Irish Government options include, a whole-of-government approach, and positioning development of a bespoke model with one State agency. This paper prefers the latter option, with the Defence Forces the agent best positioned to deliver, with immediate support to such activities as, strategic planning, procurement, and capability development.

What is meant by ‘Horizon Scanning’?

Hines et al. (2018, p.136) define horizon scanning as “a foresight method that can help managers and policy makers develop and maintain a broad and externally focused forward view to anticipate and align decisions with both emerging (near-term) and long-term futures.” Conversely, Habegger (2009, p.8) posits that “the concept of horizon scanning is only vaguely defined and is used differently by various actors” and he characterises it as comprising activities, “that aim to improve the capabilities of organizations to deal with an uncertain and complex future.” This is a useful description for the purpose of this study, which explores development of Defence Forces capacity to recognise and deal with an uncertain and complex future. Hines et al. (2018, p.137) consider that horizon scanning “serves as an early warning system to identify potential threats and opportunities.” Connery (2003, p.14) envisages that horizon scanning should “seek to exploit the broadest range of information sources and perspectives available (within resources, of course) to search for ‘weak signals’ that provide early indicators of future trends.”

Delaney (2014, p.13) contends that “horizon scanning in its broadest sense is an attempt to systematically imagine the future in order to better plan a response.” However, Miles

and Saritas (2012, p.535) argue that horizon scanning can often be “conducted in an unsystematic and infrequent manner.” Rowe et al. (2017, p.226) acknowledges that horizon scanning is often criticised for being, “an unsystematic process that eventually leads to information overload and so, in actuality, adds little in value to organizational knowledge”. This is not to say that a systematic model and process for horizon scanning cannot be adopted; Meessen et al. (2020, p.5), recommend that horizon scanning “should be periodically repeated.” Horizon scanning supports decision making and policy making in addressing future security challenges and keeping pace with the ever changing global threat environment.

Roles and Functions of Horizon Scanning

Cuhls (2019, p.4) suggests that horizon scanning “has an important role in forward-looking, prospective, or anticipatory activities: it serves to explore futures, ‘emerging issues,’ and signals of all kinds, and to evaluate the importance of ‘things to come’”. Garnett et al. (2016, p.83) considers horizon scanning as just one of a range of tools which facilitates, “systematic use of the best emerging information on potential opportunities, obstacles and change”, providing utility to planners and decision makers at the strategic level. The function of horizon scanning within this process is to carry out “a thorough examination of risk, uncertainty and emergent trends to identify, and work through, assumptions (implicit or explicit) about the future.” Miles and Saritas (2012, p.540) recognise “that in order to plan effectively, it is important to examine a wide range of factors – many if not all of them uncertain factors – that are liable to impinge upon the things that we are planning for.” A key goal for horizon scanning is , “to identify – as much as possible – what, where, why and how events could enhance, prevent, degrade, speed up, or delay achievement of objectives (Delaney, 2014, p.13).” Horizon scanning may often be seen as a stand-alone function, yet its role within broader processes, such as strategic planning, is where it may be most impactful.

Hines et al. (2018, pp.136-137) posit that horizon scanning plays an important role in improving “organisational performance” while helping to “develop and maintain a broad and externally focused forward view to anticipate and align decisions with both emerging (near-term) and long-term futures.” They predict that a horizon-scanning system will become an indispensable component of an organisation or agency as the world moves

into an increasingly uncertain and challenging future. They also point out that aside from identifying emerging threats, horizon scanning can also detect paradigm shifts within threats. In the context of the current pandemic, horizon scanning could be the mechanism that guides a migration from a strategy of “Fight COVID-19” to, or from, a strategy of “Live With COVID-19”.

Defence and Security Scope of Horizon Scanning

The UK has refined broader interpretation of horizon scanning, highlighting that, for defence planners and decision makers, there is a need “to identify future developments, spot potential disruptions and detect weak signals” (UK MOD, 2018, p.3), so that future security challenges can be addressed early. In the context of the Russian invasion of Ukraine, there is clearly a need for security and defence sectors to horizon scan for emerging threats associated with geopolitical risk. Such risk can be defined, “as the risk associated with wars, terrorist acts, and tensions between states that affect the normal and peaceful course of international relations. Geopolitical risk captures both the risk that these events materialise, and the new risks associated with an escalation of existing events” (Caldara and Iacoviello, 2019, p.6). It is clear today that Ireland and Europe face increasing security threats, posed by complex geopolitical realities, exacerbated by the global COVID-19 pandemic, including disinformation, extremism, and challenges to governance and legitimacy. The invasion of Ukraine by Russia is an example of the materialisation of one such risk, and one which has also escalated other emerging threats, such as those associated with hybrid activity.

Giannopoulos et al. (2021, p.9), in describing new forms of conflict/warfare, outlines a wide range of concepts such as ‘cyber warfare’ and ‘information warfare’, that are components of hybrid warfare. Hybrid activity continues to be a source of emerging threat to European security (Meessen et al., 2020, p.5) and it offers hostile actors, “a relatively low-cost, high-gain alternative to pursue national interests.” Giannopoulos et al. (2021, p.14) note how such activity aims to attack states across a number of domains, using combinations of instruments, exploiting weakness and taking advantage of opportunity. Giannopoulos et al. (2021, p.9) recognise that hybrid threats raise “the issue of systemic vulnerabilities of democratic systems as particular targets and clearly argues for comprehensive approach with civil-military cooperation from the very beginning.”

Any proposed comprehensive approach should include horizon scanning, to ensure identification of new, or emergent, threats, as well as understood, established threats. In any case, even the understood and well-established threats need to be detected as, “being ‘under the radar’ as much as possible is one of the characteristics of hybrid threat activities” (Giannopoulos et al., 2021, p.9). Meessen et al. (2020, p.8) advise that hybrid conflict “is spreading to new frontiers with smaller states acting as both the perpetrators and victims of hybrid tactics.” Ireland is a smaller state that has been a victim to hybrid activity, and is likely to be a victim to this sort of emerging trend in the future. Hybrid activity is both an extant threat and an emerging threat to Ireland. The 2021 cyber-attack on Ireland’s Health Service Executive (HSE) represented a strategic shock to the state. Horizon scanning may be a useful process in providing early warning to such emerging threats and strategic shocks.

The Utility of Horizon Scanning

Strategic surprise is often a product of, “the inability of strategic planning to handle quickly and efficiently individual fast developing threats and opportunities” (Ansoff, 1975, p.32). Strategic planning is highly dependent on strong signals, which means that strategic planning processes do not see threats or opportunities until they have clearly manifested. Horizon scanning searches for weak signals of emerging threats and is, therefore, useful for augmenting strategic planning processes. Connery (2003, p.14) captures this utility, wherein he describes horizon scanning as, “a deliberate or purposeful strategic planning activity where emerging changes and developments are analysed to identify events, trends and drivers.” The practice of employing horizon scanning in military strategic planning is not a novel idea; it “has long been practiced in the military, the intelligence community, and the business world” (Hines et al., 2018, p.137). Additional to its application in the military, we can learn from its application in a wide variety of fields such as, intelligence and business, but also disciplines such as medicine and ecology. Sutherland et al. (2008, p.823) make reference to a growing recognition of horizon scanning, “having a major contribution to make to strategic planning, risk management and policy making. It can also inform research prioritization.” Connery (2003, p.14) considers horizon scanning valuable “because it can support capability development, consequence assessment and options development.” This research paper

examines and explores the contribution horizon scanning can make to, strategic planning, capability development, and research prioritisation within the Defence Forces.

Horizon Scanning and the Irish Defence Forces

Omand (2021, p.10) recognises that the military “comes with the proven advantages of a reliable chain of command, experienced planners, resilient communications, and disciplined personnel.” The Defence Forces has been called upon for these very advantages by government in response to many crisis or emergency events such as severe weather events over recent years. However, Shultz (2006, p.4) recognises that specific agencies, like the Defence Forces, are generally “under-funded and under-resourced for the complexities challenging them as well as for the emerging turbulence and the surprises it will generate.” Notwithstanding, Omand (2021, p.10) concludes that “when civil resources become exhausted or falter, as has happened at times over the COVID-19 crisis, then governments have only one direction in which to look for relief—that is to seek the use of defense capability.” Despite the Defence Forces being an organisation that is under-funded and under-resourced, it was continually called upon during the COVID-19 crisis and made a significant contribution to the national effort with testing, vaccination centres and supply chain tasks. This raises the debate as to whether the Defence Forces could have been better prepared to respond to the COVID-19 crisis. To be prepared for such a crisis, there is a need to anticipate it through a foresight process like horizon scanning.

This, of course, requires ‘buy-in’ from senior policy and decision makers. Garnett et al. (2016, p.89) finds that encouraging “decision-makers to engage with possible future events outside the current trends and patterns of change is a difficult task.” This is critical if the Defence Forces is to anticipate the range of future threats the state are likely to face in the coming years. Horizon scanning processes “deliberately challenge” existing ways of thinking and “present decision-makers with potential high-impact issues that embody a rise in uncertainty and assume a consequence of actions that become increasingly unpredictable.” Day and Schoemaker (2005, p.137) argue that organisations “in complex rapidly changing environments require well-developed peripheral vision” while Delaney (2014, p.6) posits that organisations “with chaotic/rapidly changing operating and strategic environments or that are pursuing new and novel strategies rightly place a higher

premium on horizon scanning.” As an organisation, the Defence Forces certainly require horizon scanning but it is arguable, at present, whether or not it places any premium on this particular skillset. Anecdotally, from this researcher’s conversations with peers and superiors within the organisation, there is a growing awareness of the concept of horizon scanning and how it may act as a ‘force multiplier’ in strategic planning and capability development.

Complexity, Uncertainty and the Cynefin Framework

The Cynefin framework is a decision support model developed by David J. Snowden, which is helpful in understanding complexity theory. It offers a very good basis for aiding our understanding of complex issues and systems, such as future security challenges and emerging threats. French (2013, p.457) suggests that the Cynefin framework can, “help identify what methodologies might be suitable for the problem faced” and can also be used to, “gain insight into the qualities of the issues that they face”. The UK MOD (2017, p.48) explains that the Cynefin framework, “sorts the issues facing leaders” into different contexts or ‘domains’ (Figure 1).

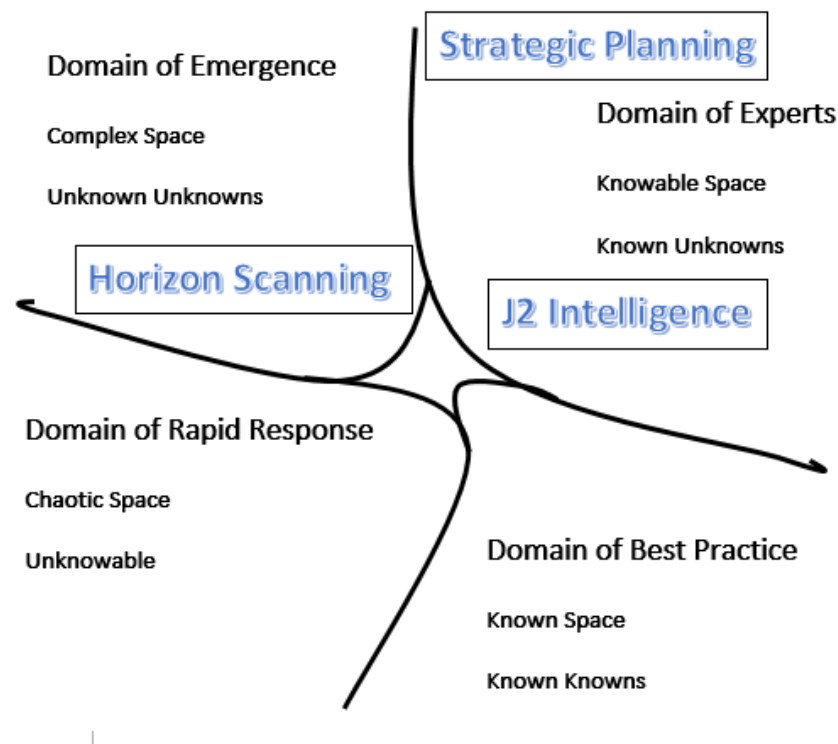


Figure 1 Cynefin Framework Domains model adapted from Kurtz and Snowden (2003, p. 468)

In the ‘domain of experts’ or ‘knowable space’, activities such as, the operational-level planning process, strategic planning, and intelligence gathering, thrive. Ho and Kuah (2014, p.20) advise that the future, “promises ever more complexity, carrying in its train more black swans and unknown unknowns” and note the necessity for governments and militaries, “to operate and even thrive in this complexity, and to deal confidently with strategic shocks when they occur. The first step is to acknowledge the inherent complexity of the operating environment.” The complexity and uncertainty of the contemporary operating environment means that confining activities, processes, and procedures, to the ‘domain of best practice’ and ‘domain of experts’ is no longer sufficient to meet current and future security challenges. There is a growing realisation that the ‘domain of emergence’ or ‘complex space’ is, “where the operational now usually sits (UK MOD, 2017, p.48).”

Quiggin (2007) notes how the changing global threat environment is having profound implications for the strategic intelligence requirements of states in the 21st century. He stresses the importance of having senior decision makers, with an ability to anticipate future threats. He suggests that most emerging threats are asymmetric, and that knowledge is the only effective weapon in the face of an asymmetric threat. Interestingly, he considers the SARS virus every bit as serious as transnational terrorism. It is probable that if the time of writing was 2021, rather than 2007, he would have referenced COVID-19 instead of the SARS virus. Nonetheless, the foregoing emphasises the nature of the threat, and the requirement to generate knowledge, in order to advise decision makers of impending shocks and impacts.

Snowden and Boone (2007, p.68) assert that, “hindsight does not lead to foresight because the external conditions and systems constantly change.” It follows then, that the Defence Forces cannot continue to rely on past experience as a basis for planning, as systems and conditions that are understood through retrospective coherence or hindsight lead to incoherence in strategic planning and capability development. Coherence in strategic planning and capability development demands employment of foresight to identify threats and opportunities. Horizon scanning is essential, to navigate the complexity and uncertainty of the ‘domain of emergence’ or ‘complex space’ and, generate the knowledge that both aids anticipation of emerging threats, and informs processes that exist in the ‘domain of experts’ or ‘knowable space’. Regardless of the Horizon-Scanning

process adopted, the Defence Forces must be capable of sorting “through the noise surrounding the key information that is generated” (Rowe et al, 2017, p.227). This requires a sense-making step, to follow information gathering. In other words, horizon scanning will need to use, “perceptions as a means of interpreting current developments and their implications for the future” (Rowe et al, 2017, p.228).

Towards a Model for Horizon Scanning

A State or agency attempting to develop and utilise an effective model for horizon scanning, will “require effective knowledge management/translation, and sense-making to impact on decision-making” (Garnett et al, 2016, p.89). Amanatidou (2012, p.219) cautions “that the effective selection and communication of the most important issues at the right time is both a challenge and an absolute necessity,” and, while decision makers can gather the information they, often, “are not capable of putting them into a context where the significance can be determined” (Quiggin, 2007, p.127). Garnett et al, (2016, p.88) posits that, there needs to be, within a horizon scanning process, a component to “evaluate and prioritise emerging issues in terms of their potential future impacts.” This is crucial as identifying weak signals and potential emerging threats is only part of the process and does not yield tangible intelligence in itself to assist in the decision making process. In the absence of informed analysis, or sense making, the product is the cause without the effect; senior decision makers need to understand the cause-and-effect relationship of emerging threats, and their likely impacts, in order to make informed decisions to mitigate them.

Könnölä et al, (2012, p.223) offer support to this idea, with a holistic description of horizon scanning as, “a creative process of collective sense-making by way of collecting and synthesizing observations that hold potential for the elaboration of pertinent future developments and the derivation of actionable implications for decision-making.” This forms a good basis for considering a model of horizon scanning for the Defence Forces. The following chapter delivers an examination of conceptual framework models, that include a horizon scanning method, meet the foregoing imperatives, and “anticipate types of problems that are coming over the horizon before they arrive” (Quiggin, 2007, p.43). The essence of horizon scanning, is to look over or beyond the horizon to identify threats before they become problems or crises so that mitigation can be implemented

early. Or, in cases where no mitigation or avoidance are possible, so that preparedness to absorb or endure can be readied. Having explored how horizon scanning can be employed in an Irish context and to what extent it is useful in identifying emerging threats to Ireland, the following chapter will outline a range of options available to deliver effective horizon scanning.

CHAPTER TWO – A FRAMEWORK FOR HORIZON SCANNING

Introduction

The aim of this chapter is to identify and evaluate different methodologies of horizon scanning across a range of fields and disciplines, in order to select, devise and develop a suitable methodology for the Defence Forces.

While disciplinary expertise and knowledge of best practices remain fundamental, it has been argued that higher levels of mental complexity and adaptive capabilities will be needed to manage an increasing number of novel situations and wicked problems likely to emerge in the future. (Yakawa, 2015, p.166)

The Defence Forces, while very adept at indoctrinating best practice, faces similar challenges to like-minded organisations in developing novel practice to deal with complexity and uncertainty. Defence Forces needs are unique; Amanatidou et al. (2012, p.208) contend that the optimum horizon-scanning method is, “subject to contextual and content issues.” Development of a bespoke model, that allows the Defence Forces “to examine the external environment for trends and leverage those insights to create images of the emerging landscape”, is required (Canyon, 2018, p.1). It follows then that the Defence Forces ought to utilise such means in order to stay ahead of future security challenges. To achieve this Canyon (2018, p.1) contends that “[s]taying ahead of the curve requires not only an understanding of systems and complexity, but also a creative and collaborative thinking and action.” Consequently, it is imperative that a conceptual framework model of horizon scanning, that adequately scans for early signals of new and emerging threats, must include a function of sense making. An ideal framework would deliver, “a collective exploration of issues, trends, and other factors that could impact the future environment” and “support expanded strategic thinking and planning for the future” (Canyon, 2018, p.1).

Van Rij (2008, p.10) suggests that amongst potential applications for governments’ horizon scanning, has capacity to “alert policy makers to forgotten and emerging (new) risks and opportunities, to provoke reflection and further investigation of the uncertainties, to challenge dominant, implicit assumptions about the future.” In the case of the Defence Forces, a process that helps the organisation to navigate change, hedge against uncertainty, avoid strategic surprise, and strengthen organisational robustness and resilience. This research seeks identification of such appropriate methodology.

Proposed model for Horizon Scanning

A review of literature identified different methodologies of horizon scanning. The phases and steps of each methodology were then examined to identify commonality. For example Hines et al. (2019, p.1) assess that, “[h]orizon scanning generally follows a process of signal detection, filtration, prioritisation, assessment and dissemination.” These five steps were continually identified in the literature review. The Danish Emergency Management Agency (DEMA, 2016, p.6) asserts that before beginning the scan or “starting the analysis it is vital that the scope is calibrated.” The assertion was repeated in the literature and supports the inclusion of a ‘calibration’ step as in initial and sixth component. To design and propose a horizon scanning model for the Defence Forces, required taking a critical look at these constituent parts of horizon scanning. A conceptual framework model for horizon scanning (Figure 2) was informed by the research into various models, across a diverse range of disciplines, and the researcher’s knowledge of Defence Forces context.

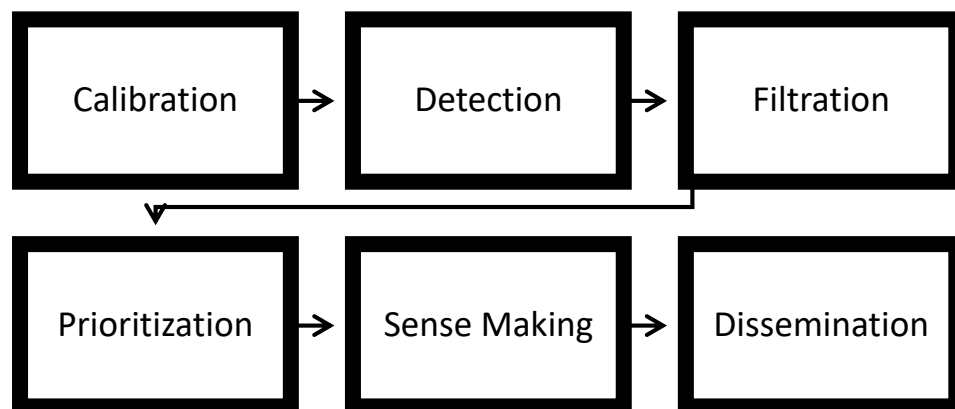


Figure 2 Proposed Model for Horizon Scanning (Clancy, 2022)

Calibration

According to Petersen et al. (2008, p.102) the “first step in building the framework is to identify the issues that are critical to the subject being considered.” Hines et al. (2018, p.138) concur that, the “process begins with framing the domain or topic to be explored.” While it is critical to consider the purpose and scope of the scan, prior to commencing any horizon scanning activity, Hines et al. (2018, p.138) concede that “some preliminary scanning” can assist in narrowing or broadening the scope of the horizon scan. Hines and Bishop (2013, p.33) describe “bounding and scoping” as a key challenge of horizon scanning; while, Cuhls et al. (2019, p.14) describe the first step as, “defining the scan field”. A boundless or undefined horizon-scanning process has little utility, and defining the purpose and scope at the beginning of horizon scanning is critical. To provide focus to horizon scanning activities, the selection of a topic or thematic focus is also useful, particularly for the intelligence-gathering function. The thematic focus can be narrow, for very specific horizon-scanning projects, or it can be broad, focusing on areas such as national security, climate change, cyber security and disinformation, areas where emerging threats are likely to develop in the future” (Cuhls et al., 2019, p.15).

Connery (2013, p.28) stresses the importance of, “settling the time dimension”, while also acknowledging that the longer timeframes of many horizon scans “might not suit other purposes, such as risk management”. Clancy (2021 p.41) cautioned that, “horizon scanning was vulnerable to becoming speculative with time horizons of more than 5 years.” Notwithstanding, time horizons vary greatly, depending on many factors; with some horizon-scanning projects, “the near future of five years is interesting, for others, the very long-term (30 years or more)” (EU, 2017, p.25). Despite this variance across different horizon scans, Hines and Bishop (2013, p.33) note that a time horizon for individual horizon scans should be specific in terms of, “how long into the future the forecast extends”. The setting of these time and thematic boundaries from the outset can be described as calibration of the horizon scan, prior to the detection component.

Detection

Probability is less important than plausibility, when horizon scanning for emerging threats. Indeed, a key component of horizon scanning is the detection of weak or faint signals of emerging threats. Rowe et al. (2017, p.226) posit that successful identification of emerging threats, “involves exploration via continuous information gathering, monitoring and scanning of the external environment.” The UK Cabinet Office (UK MOD, 2017, p.4) recommends that, “scanners trust their intuition when it tells them a weak signal indicates something that will be strategically important in the future.” Without this level of trust on the ‘scanner’s’ behalf, weak or faint signals of an emerging threat will be missed. Unlike intelligence analysts, horizon scanners are not trying to accurately predict future crises or events; the threat is not mature or strong enough to assign any probability to it yet. French (2013, p.557) explains that, in the domain of emergence, or complex space as it is known in the Cynefin framework, “one has too little knowledge to build probability models with any confidence.” In essence, horizon scanning is searching for early warning, so a response or mitigation can be anticipated and planned for. It is essential that a horizon scanning method puts in place an intelligence gathering or ‘signal collection’ function. The method of this collection may be done through desk research, internet trawls, or the employment of expert focus groups. Meessen et al. (2020, p.7) capture this horizon scanning requirement, noting method can be, “based on literature and media scanning, expert sessions and information exchanges with international peer institutes”, among other things.

Filtration

Urhuqart and Saunders (2016, p.250) suggest that a vital early-stage component of horizon scanning, “involves initial filtering of large volumes of data”. However, Habegger (2009, p.7) cautions that this is no easy task as an “abundance of information may lead to a deficiency of attention, that complicates the process of filtrating out the critical signals from the distracting noise.” Zhang and Gronvall (2010, p.1238) acknowledge that, “horizon scans have been used to detect trend shifts and to identify strategic national security issues”, and it is this ability of horizon scanning to identify trend shifts or national security issues from an abundance of information that is a critical strength. Failure to separate ‘the wheat from the chaff’ will ultimately erode confidence

in the process, while running the risk of something being ‘missed’, with serious intelligence failure following.

Prioritisation

Urhuqart and Saunders (2016, p.250) recommend a, “categorization and analysis of the information” otherwise known as a ‘sorting of the scans’. This serves to prioritise scans or hits based on predetermined criteria. Habegger (2009, p.7) explains that, “ranking and prioritizing the issues that are relevant”, is a key component of the horizon-scanning process. Similarly, Hines and Bishop (2013, p.45) stress the importance of prioritisation in the horizon-scanning process and posit that it is, “a valuable asset because they together identify the most important alternative futures, those with the greatest impact on domain.” Hines and Bishop (2013, p.45) expand the point, noting that prioritisation of these alternative futures is based on, “two criteria – impact and uncertainty.” Prioritisation, based on the identified most important alternative futures, allows organisations, such as the Defence Forces, to hedge resources and effort against their uncertainty and foster resilience and robustness against their impacts.

Sense making

Habegger (2009, p.11) acknowledges that after, “information has been scanned, collected, filtered, and processed, the gathered evidence is interpreted.” However, Quiggin (2007, p.127) cautions that while weak signals are, “frequently seen, observers ignore them or are not capable of putting them into a context where the significance can be determined.” Therefore, a robust sense-making function is essential to analyse the harvested information, in order to adequately consider the future implications of scan results. This is what Habegger refers to as, “the generation of foresight”. The Cynefin framework offers a useful perspective on the cause and effect relationships of different systems, such as emerging threats. The EU (2020, p.29), considers that emerging threats, “have a high degree of uncertainty in terms of their probability of occurrence and the potential damage they may cause.” Systems such as emerging threats, that possess a high degree of uncertainty and complexity, reside in the ‘domain of emergence’ or ‘complex space’ of the Cynefin framework. The aim of sense making is acquisition of a greater understanding of the probability of occurrence and the potential impacts, in order to

facilitate analysis in supporting decision makers. The process of sense making is a useful technique in the generation of foresight.

French (2015, p.1638) assesses that, “cause and effect are very difficult to relate with any confidence”, to systems and issues such as emerging threats that exist in the ‘domain of emergence’ or ‘complex space’. In Rumsfeldian parlance, they are the ‘unknown unknowns’, and their cause and effect relationship are only understood retrospectively. Consequently, they are difficult to risk-assess, as there is insufficient understanding of the emergent patterns that would predict the outcomes. Kurtz and Snowden (2003, p.469) suggest that, “[e]mergent patterns can be perceived but not predicted; we call this phenomenon retrospective coherence.” Retrospective coherence is of little utility in supporting decision makers in preparing for the next crisis, as each crisis is unique. Even in cases of major similarity and overlap between the last and next crisis, there will always be some variable that makes a prepared response difficult. Reliance upon retrospective coherence is folly, in the pursuit of supporting decision makers in anticipating strategic shocks. Instead, success in avoiding strategic shocks will be won or lost by the effectiveness of horizon scanning. In particular by the interpretation or ‘sense-making’ of the weak signals of emerging threats identified by horizon scanning. In this interpretation, or sense-making function, French (2013, p.552) posits that, “judgement, tacit knowledge and exploration” is useful in analysing emergent threats and patterns, until enough is understood of them that they migrate to the ‘domain of experts’ or ‘knowable space’ of the cynefin framework. In other words, the identified emergent threat has been sufficiently interrogated that any impending shock is anticipated.

Dissemination

Communicating the results of horizon scanning is essential if it is to have any utility with Delaney (2014, p.36) positing that “[g]ood communication is central to successful horizon scanning”. However, she also concedes that “[o]ne of the trickiest aspects of horizon scanning is determining how to communicate” the findings of the horizon scan that will convince senior leaders and decision makers to act on those same findings. Similarly, Miles and Saritas (2012, p.542) agree that “it will be important to present the results of [horizon scanning] in ways that are meaningful and cogent to the intended

audience” who, in the context of this research, are the senior leaders and decision makers of the Defence Forces.

Disseminating the outcomes and results of horizon scanning can be achieved via “numerous pathways” such as periodic updates, annual reports, or notification of target groups (Rowe et al., 2017, p.226; Hines et. al, 2019, p.6). While Hines et. al (2019, p.6) recommend that dissemination of these results, “should be made systemically through diverse platforms and shared directly with relevant” stakeholders and decision makers, military organisations, such as the Defence Forces, will undoubtedly need to consider more secure forums for information sharing. Notwithstanding, the method of sharing results of scans, the content and timeliness of the information shared is key. Ansoff (1975, p.22) notes that, “the content of the forecast must be adequate to permit the planners to estimate the impact”, and allow them time and space to, “perform the damage estimate ... within certain parameters of confidence, well before the potential crisis strikes.”

Amanatidou et al. (2012, p.219) contendss that, “experience has also shown that the effective selection and communication of the most important issues at the right time is both a challenge and an absolute necessity.” Convincing senior leaders and decision makers of the criticality and utility of horizon scanning is paramount. This can be achieved, in part, by promoting obligation of ownership of those emerging risks identified by horizon scanning and by “disseminating the acquired outputs efficiently (Hines et.al, 2019, p. 7). Successful dissemination of the findings, communicates the potential impacts with stakeholders, long before the catastrophe arrives (Fink, 2000, p.37).

Analysis of the proposed model of Horizon Scanning – The Cynefin Framework

The Cynefin framework provides an intuitive backdrop for further analysis of the proposed horizon-scanning model. Having established that horizon scanning is suited to operating under conditions of uncertainty and complexity, the proposed model was designed principally to identify emerging threats and opportunities that reside in the ‘domain of emergence’. However, also included as imperative was a sense-making function, that informs the decision process for future planning. The proposed model of horizon scanning now occupies space across the upper two domains of the Cynefin framework, as shown in Figure 3.

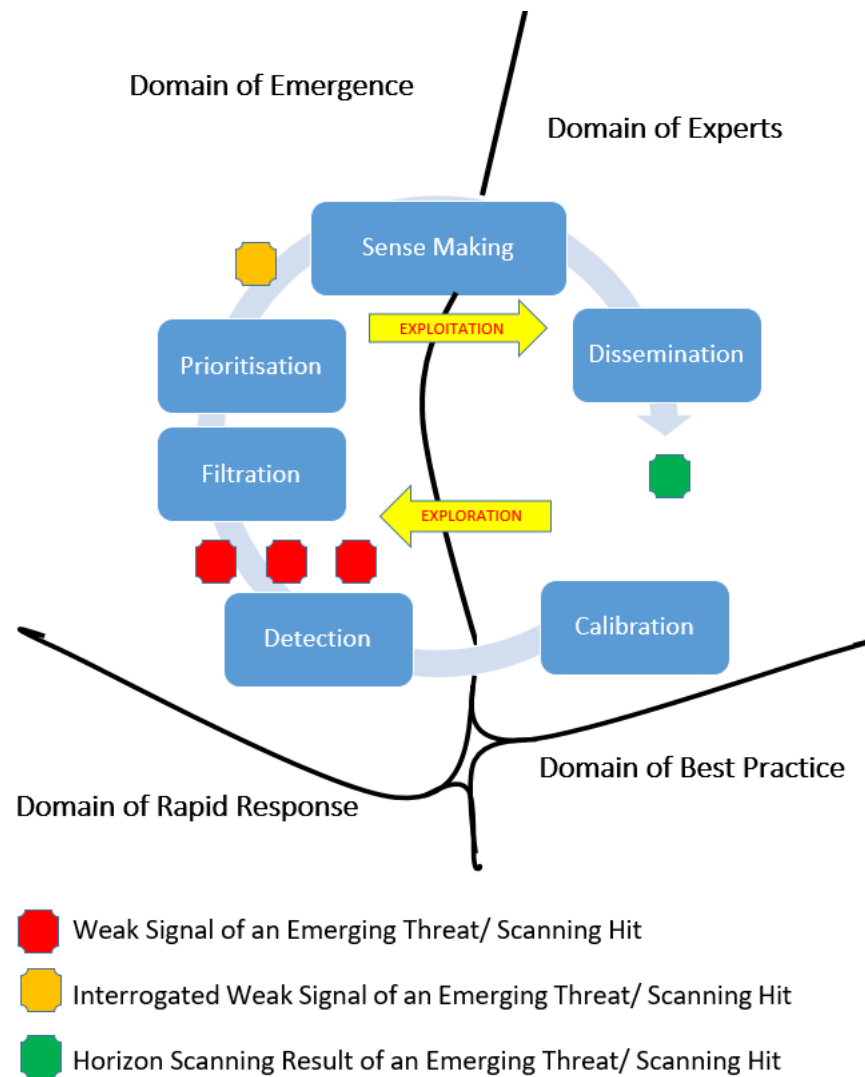


Figure 3 The proposed conceptual model for Horizon Scanning and the Cynefin Framework (Clancy, 2022)

The scope, time horizon, and thematic focus for the horizon scan are set by analysts and experts, and therefore, the calibration of the scanning activity does not occur in the ‘domain of emergence’ but rather the ‘domain of experts’. Similarly, after sense making has taken place much of the complexity and uncertainty has been removed. And so, the dissemination, or communication, of horizon scanning outputs and results is occurring in the ‘domain of experts’, where intelligence analysts and strategic planners can integrate this data into their own processes and activities. With these first and final steps of the proposed model in the ‘domain of experts’ or ‘knowable space’, the proposed horizon-scanning method can be described as a supportive activity, rather than an alternative to processes such as strategic planning and intelligence gathering. Kurtz and Snowden (2003, pp.474-476) assess that the, “[b]oundaries are possibly the most important

elements in sense-making” and the “boundary between the knowable and the complex can be a fruitful one.” This is significant as the proposed model transitions the boundary between the knowable and the complex twice. These boundary transitions give a different perspective, or viewpoint, of the six steps of the proposed model; the process can be seen in two distinct phases – exploration and exploitation.

The ‘exploration’ phase of the horizon scanning process is, “movement from the knowable to the complex, selectively (Kurtz and Snowden, 2003, p.476).” The proposed model selects the thematic focus and time horizon in the calibration step, and moves across from knowable space to complex space to commence the detection step. This movement is ‘exploration’, and is characterized by Kurtz and Snowden (2003, p.477) as “an opening up of possibilities by reducing or removing central control without a total disruption of connections.” The ‘exploitation’ phase of the horizon scanning process is “movement from the complex to the knowable, selectively (Kurtz and Snowden, 2003, p. 477).” The proposed model selects the weak signals of emerging threats or ‘scanning hits’, through sufficient interrogation by the filtration and prioritisation steps. Clancy (2021, pp.13-14) explains that, once emerging threats, “have been scanned, identified and processed they may begin to move from ‘complex space’ to ‘knowable space’.” The sense-making step is where patterns stabilise and cause and effect relationships begin to be understood representing a transition from ‘complex space’ to ‘knowable space.’ This is where the proposed model for horizon scanning for the Defence Forces begins to bear fruit. The dissemination step is where the products or scanning results inform mitigation measures and responses to the identified emerging threats, and more broadly inform and support activities in the ‘domain of experts’ or ‘knowable space’ such as strategic planning and the intelligence function.

Lawrence (2016, p.20) considers that a key strength of the Cynefin framework is that, it affords “analysts and decision-makers the opportunity to see things from alternate viewpoints.” In this regard, the perspective the Cynefin framework offers is particularly helpful. While each of the six steps, or components, of the proposed model are valuable and necessary to the process, not all should be considered as core functions of horizon scanning, with some, such as calibration and prioritisation, being preparatory or ancillary activities. The representation of the proposed model, as a process in two distinct phases

of exploration and exploitation, offers a clear purpose and facilitates objectives to be defined. Intuitively, these phases of exploration and exploitation give rise to the following objectives:

- To explore emerging threats, opportunities, issues and trends that could impact the future security environment. (Exploration.)
- To generate meaningful foresight that informs and supports expanded strategic thinking and planning for the future. (Exploitation.)

Staffing and resourcing of Horizon Scanning in the Defence Forces

The development of a methodology for horizon scanning for the Defence Forces is of little utility if there is no assigned organisational component to carry out the function. As with all functions within the Defence Forces, the human resourcing of a horizon scanning function is critical. It is appropriate to consider who should be responsible for implementing such a function. From the research, it is apparent that horizon scanning should be carried out at the level of Defence Forces Headquarters, as the threats, opportunities, and issues, are both global and national, societal and cross-cutting and can involve whole-of-government, public and private interests, and strategic partners across Europe and beyond. Indeed, many threats pertain to national security and defence with certain threats that can be considered existential. Assigning this function to a particular directorate, branch or cell, with commensurate competence sets, requires even further consideration. Analysis of the competence required, and the people best suited to this function should aid identification of ‘where’ and ‘with whom’ the function should reside.

The Danish Emergency Management Agency (DEMA, 2016, p.24) suggests, “that the presence of generalists is more important than specialists” in the process of carrying out horizon scanning. This is a familiar debate in military planning processes, with generalists usually making up the core of the planning group, and specialists being called on periodically for their subject matter expertise. While this is also true of horizon scanning, the generalist analysts who constitute the core of the horizon scanning group “should ideally be skilled in disciplines such as risk assessment, scenario-building, sense-making, strategic foresight”. Therefore, it can be said, that these horizon scanning analysts are specialists in the process of horizon scanning but are generalists in the content and product of particular horizon scans. DEMA (2016, p.24) envisage that, “[s]pecialists may be on

call if specific needs arise.” Petersen (2008, p.102) envisages this as, “assembling a number of individuals who have responsibility for studying the subject in a relatively short, highly interactive process to systematically develop a model of the underlying system being evaluated—like terrorism or infrastructure failure.”

DEMA’s assertion that horizon scanning analysts or ‘scanners’ should be skilled in strategic foresight would suggest that horizon scanning should reside in Strategic Planning Branch (SPB). However the OCED cautions that the, “task of developing strategies and plans is enhanced and supported, but not replaced, by the process of considering multiple alternative futures and their implications.” Therefore an over-reliance on horizon scanning to produce outputs to inform strategic planning may foster scepticism of the utility of horizon scanning. A similar problem exists with its nesting within its other obvious home, the Directorate of Intelligence (J2). Scepticism may appear in horizon scanning’s ability to contribute to intelligence assessments in that, “when emerging threats don’t materialize or ‘come to pass’, confidence in the process of horizon scanning becomes eroded quickly” (Clancy, 2021, p.41).

Therefore, if a Horizon Scanning Cell were to be established within either SPB or J2, it is important that it does not become disconnected from the other. Equally, any ‘silo effect’ of horizon scanning should be avoided, in order that it does not lose its effectiveness in contributing to other functions such as research and development. A Horizon Scanning (HS) cell would be mutually beneficial to the proposed Research, Technology and Innovation (RTI) cell, provided that information sharing is unimpeded between the two cells. Ideally, both cells being nested in the same branch would facilitate information sharing and mutual support of their respective functions.

Conclusion

It is worth considering that the horizon scanning framework devised, developed and implemented by the Defence Forces should not duplicate work undertaken by the Directorate of Intelligence (J2). Gustafson (2010, p.610) observes the fact that horizon scanning, “deals with plausibilities rather than probabilities is one of the most marked differences” it has from intelligence gathering. While intelligence analysts, in the gathering of information, look for strong signals and make a predictive assessment based on probability, horizon scanning analysts or futurists detect weak signals and assess the

plausibility of a range of outcomes in order to anticipate shocks and impacts. These will be the shocks and impacts the intelligence analysts will have missed, the ‘Black Swans’, the ‘Unknown Unknowns’. Indeed, Snowden et al. (2008, p.140) champions anticipatory thinking models over conventional predictive ones, “as the latter connotes a level of omniscience that does not usually exist in the inference of future events”. Anticipatory thinking models and cognitive processes that can be, “applied by individuals and teams in operational settings of military, peacekeeping, and [national] security”.

However, Pherson and Heuer (2021, p.251) acknowledge that “[a]nticipating future developments and implementing future-oriented policies is particularly challenging because of increasing complexity of problems, the expanding number of stakeholders, and the growing interdependence among various actors, institutions, and events.” It is particularly challenging, due in part to the added degree of uncertainty that plausibility brings over probability. Garnett et al. (2016, p.86) define plausibility as the “relevant scientific or factual basis underpinning an issue or plausible assumptions based on expert assessment of potential future developments.”

That being said, Gustafson (2010, p.602) also contends that, “horizon scanning has the potential to add much to intelligence analysis”, while the Department of Defence (DOD, 2020, p.8), acknowledges that, “[w]hat may seem remote today can quickly emerge in the form of strategic shocks that have system-wide or transnational impact.” Gustafson (2010, p.597) further outlines the benefits in that horizon scanning enables us, “to determine events that are plausible, given innovations or changes in any number of fields.” Therefore, while it is apparent that horizon scanning is both complementary and distinct from the military intelligence function, it also has a wider utility in strategic planning and research & innovation. In contemplating a framework for horizon scanning, the research needs to be cognisant of all these aspects. Having assessed different methodologies of horizon scanning, across a number of disciplines, in order to select the optimum components that best suit the Defence Forces’ needs, a bespoke model to effectively horizon scan for emerging threats to the state is proposed in this research. Additionally, a brief analysis of the most suitable structure was also conducted within this research. The following chapter continues analysis of the benefits of horizon scanning to the Defence Forces. It also examines how continuous monitoring of emerging threats, by a dedicated horizon scanning cell, can iteratively inform capability development, research

& development, structural reorganisation, resource allocation, training needs requirements, and overall strategic planning, as well as make a valuable contribution to intelligence assessments.

CHAPTER THREE – HORIZON SCANNING AND THE DEFENCE FORCES

Introduction

This chapter considers the benefits of horizon scanning to the Defence Forces and how continuous information harvested from this process can iteratively inform strategic planning, capability development, RTI, generic capability, Irish neutrality, strategic shock and intelligence.

This perception of a benign environment is at the root of Ireland's defence planning problem in that Ireland is generally observed to have no pressing defence problem. The work of policy makers, strategists and planners is more straightforward if the threat has been clearly identified and is well understood. This may partly explain Ireland's apparent inertia in responding to threats that are poorly articulated or only imagined and anticipated in the abstract. (McGourty, 2020, p.14)

If a "perception of a benign environment is at the root of Ireland's defence problem" then horizon scanning for evidence that it is, indeed, only a perception of a benign environment is the answer to Ireland's defence planning problem. The policy makers, strategists, and planners of the Defence Forces need to become more comfortable with uncertainty, with the sort of threats that are not clearly defined and are not well understood. These are not established or known threats, but emergent threats that may only be detectable as faint or weak signals through horizon scanning. Göllner et al. (2015, p.5) describe a suitable horizon scanning method as one, "developed to address social needs, as well as scientific capabilities and technical solutions and will produce reliable knowledge about analysing weak signals for threats, disruptive events and long-term trends." The conceptual model proposed in the last chapter offers the Defence Forces a suitable horizon scanning method to achieve the outputs and goals described by Göllner and his colleagues.

However, it is worth noting that, Göllner et al. (2015, p.5) acknowledge that, at the core of foresight, lies an intention not to predict but to build, and "knowledge development and horizon scanning are support actions for strategic planning activities." This supports the idea that, within the Defence Forces, horizon scanning should be nested under strategic planning, rather than under the Intelligence function. Horizon scanning is as much about anticipating and mitigating emerging threats as it is about identifying them,

and as such, is central to the development of capabilities, which reinforces the idea that it should form a fundamental component of strategic planning.. Notwithstanding the foregoing, horizon scanning continues to add value and definite utility to the Intelligence function, and in other areas, which follow in this chapter.

The utility of Horizon Scanning in Strategic Planning

Hughes and Hodgkinson (2021, p. 240) posit that it is “a rational, analytical decision-making ability” enabling an organisation “to transform proactively to environmental change, which distinguishes strategic planning from functional planning.” In other words, strategic planning distinguishes itself by integrating supportive activities to analyse the changing environment and facilitate informed decision making. One of these supportive functions is horizon scanning which detects, filters and prioritises the changes in the environment. By employing the proposed horizon scanning method, the Defence Forces would further distinguish its strategic planning process from that of one of mere functional planning. Notwithstanding this distinction, if strategic planning is to be a dynamic capability within the Defence Forces then it “should not be thought of as simply the development of a strategic plan” (Hughes and Hodgkinson, 2021, p.243). This simplification amputates those supportive actions, such as horizon scanning, that make it a dynamic capability and define it as “an activity that continually integrates, combines and reconfigures” new and emerging information on an ever changing and evolving operating environment (Hughes and Hodgkinson, 2021, p.243).

Alotaibi (2020, p.25) recommends that the “possibility of developing a holistic model of strategic planning antecedents should also be investigated to combine the research on individual antecedents, and how they can function together as a system.” Such a comprehensive approach should include knowledge antecedents drawn from hindsight, insight and foresight. Indeed, Missiroli (2013, p.4) asserts that a “foresight component, however volatile and open-ended, is important for any credible ‘strategic’ approach.” The proposed horizon scanning method provides a foresight component to a comprehensive holistic strategic planning process. In the following sections, it will be evident that the linkages between capability development, a research, technology and innovation capability and horizon scanning promote the concept of a comprehensive holistic strategic planning process. More specifically, the proposed horizon scanning method will enable a

research, technology and innovation capability and capability development to inform their respective processes iteratively within an overarching strategic planning process. That is to say that, required military capabilities designed to mitigate emerging threats should be one of the key drivers of research, technology and innovation within the Defence Forces. In parallel, horizon scanning should also identify existing opportunities within the sphere of research, technology and innovation which drives capability development within the organisation.

The utility of Horizon Scanning in Capability Development

The Commission on the Defence Forces (CODF, 2022, p.29) acknowledges that a lack of, “a formal Defence capability development planning process is a significant gap hindering the effectiveness of the Defence Forces in meeting the roles assigned by Government.” This is significant, as essentially it signals an existential crisis for the Defence Forces. Not surprisingly, the Commission (CODF, 2022, p. xv) recommends the, “immediate establishment of a codified top-down Capability Development Planning process in order to embed capability development within the Department and the Defence Forces.” It is significant for this research that the Commission recommends that such ‘process’, “should work towards addressing new challenges in a dynamic security environment (CODF, 2022, p.29).” Identifying and making sense of new security challenges is achieved by horizon scanning and thereby facilitates “[r]egularly updated capability development planning”, in order to address these challenges.

Similarly, DFDM-J1, the Defence Forces capstone doctrine (DF, 2015, pp.6-7) recognises that, “the type of operations that the Defence Forces may be required to undertake can change significantly as new threats emerge.” Consequently, the updated White Paper on Defence (DOD, 2019, p.43) concludes that “capabilities must be developed and maintained to meet the challenges of a dynamic security environment.” This requires in-depth analysis with DFDM-J1 (DF, 2015, pp.6-10) concluding that capability development, “necessitates analysis of current and future threats and capability drivers in the short, medium and long term.” While this analysis is informed by work conducted in the context of CSDP, the Defence Organisation’s Capability Development Planning Process is the driver of this analysis. A cornerstone of the Defence Organisation’s Capability Development Planning Process is the capturing of applicable

operational lessons. While there is utility in a lessons-learned process, it is a process of retrospective coherence and therefore does not anticipate new emerging threats or the impacts they may have. It may inform capability development in the mitigation of and well understood threats however, it does not inform capability development comprehension of the type of operations required should new threats emerge. The identification of emerging threats through horizon scanning, and analysis of their impacts and how to mitigate them, will inform operations-focused capability development. Paradoxically, this recognition that horizon scanning is required to inform capability development does not pre-suppose that horizon scanning, in itself, is a capability that requires development. Patently, this research thesis confirms that it clearly does.

The utility of Horizon Scanning in Research, Technology and Innovation

A recent feasibility study into the establishment of research, technology and innovation capability for the Defence Organisation concluded that, “clear linkages between RTI and capability development” exist (DOD, 2020, p.40). The study further recommends that “these linkages must be defined and co-evolved to ensure coherence”, while identifying “the need for horizon scanning activities [] to identify and prioritise technology sectors in the long term.” Similarly, Silfverskiold et al. (2021, p.1) recognise the utility in, “exploring the long-term developments in science and technology that may be crucial for military strategic capability decision making.” Cuhls (2019, p.180) also posits that scanning the horizon for emergent ideas, “often means the identification of new science and technology and providing information about them”; this application is particularly relevant for military organisations. Silfverskiold et al. (2021, p.9) reinforce the argument that organisations like the Defence Forces, “need to follow technology developments closely and assess how they can affect future capabilities and threats.”

It is worth noting that a key recommendation of the above-mentioned feasibility study (DOD, 2020, p.42), is the establishment of a mechanism “to identify the technology requirements of key defence capability areas and to identify gaps in the market that could facilitate innovation within the national RTI structures.” Clearly, the proposed horizon scanning model would be a suitable mechanism for this process with an ability to identify, filter and prioritise key capability areas and gaps in the markets. In addition, it would also assess the potential future military utility of identified technologies-of-interest in the

sense-making step. This understanding will, in the first instance, be provided by subject matter experts (SMEs): however, the proposed horizon scanning model will facilitate this SME input. While all steps of the proposed horizon scanning model benefit from the participation of SMEs, this is particularly crucial in the sense-making step, and to a lesser extent, in the dissemination step, to communicate the results to senior decision makers.

Horizon Scanning as a generic capability

Concepts and ideas around complexity, uncertainty and adaptability can be challenging to analyse, and a horizon-scanning model can provide benefit to the Defence Forces here. A greater understanding of topics such as Irish Neutrality, and the avoidance of organisational strategic shock, can be achieved through horizon scanning. Therefore, it can be said that, the value of undertaking horizon scanning is self-evident as it provides senior military decision makers with knowledge and analysis of developments in the global and regional security environments, as well as Ireland's domestic security environments.

McGourty (2020, p.19) alludes to, "the permanent fact that the future is neither reliably known nor knowable". Indeed the future is unknown, and only becomes known when it becomes the present, and is only knowable when it is imminently upon us. Therefore, for organisations such as the Defence Forces to anticipate future disruptive events, a process for recognising emergence is an imperative. It follows that defence planning or policy making based on, "embracing emergence" of complex systems, "requires iterative monitoring of the emerging changes, to ensure that the desirable ones are supported and the undesirable ones diverted (Horton, 2012, p.299)." Horton (2012, p.294) concludes in her study that complexity theory, "demonstrates that disruptive events do not need an associated trigger, as they are a normal part of a complex system. This insight implies that if we are always looking for weak signals we will certainly be caught unawares." Horton (2012, p.296) highlights that foresight techniques, like horizon scanning, when dealing with complex systems, "must also accept the likely absence of any early warning signals."

MacLean and MacIntosh (2015, p.77) acknowledge that organisations such as the Defence Forces, plan "paradoxically knowing that the subsequent reality will be unlikely to conform." If the advent of emerging threats does not conform to the Defence Forces'

strategic planning, then the organisation should, “experiment and improvise trying to make sense of an emergent reality.” An iterative model for horizon scanning is required, to facilitate the path forward to reveal itself, by probing these emerging threats and making sense of the emergent reality they represent. Consequently, under conditions of complexity and uncertainty, iterative and continuous horizon scanning, nested in an equally iterative strategic-planning process, is essential.

Hughes and Hodgkinson (2021, p.247) posit that, “strategic plans are often developed on an annual basis, regardless of the actual pace of change in the environment.” This could be argued as the case with the Defence Forces’ current strategic planning process. Hughes and Hodgkinson (2021, p.247) caution that this is a feature which, “will likely lead to reduced adaptability under conditions of uncertainty.” For the Defence Forces to adapt and respond with agility, a more dynamic strategic planning capability is required, that iteratively integrates the knowledge and information harvested from horizon scanning. The benefits of a continual scanning of the horizon, for emerging threats, disruptive events, and long-term trends, that intends to iteratively inform strategic planning, will be squandered on ‘snap-shot’ annual strategic plans. Consequently, a comprehensive, holistic and iterative strategic planning process that integrates the proposed horizon scanning method is paramount to success.

Horizon Scanning and Irish Neutrality

Horizon scanning is a useful tool, when considering contested and hotly debated topics that concern matters of defence and national security. Connery (2003, p.19) suggests that, “[h]orizon scanning is a potentially useful method because it can provide decision makers with targeted advice about—and a chance to consider— trends and drivers that will likely shape the organisation’s future.” On the question of neutrality, McGourty (2020, p.17) posits that, “the policy of preserving Ireland’s autonomy and sovereignty through neutrality may not stand up well against state and non-state actors wishing to gain an advantage in an era of hybrid conflict.” The proposed horizon-scanning model offers the Defence Forces a means to identify those trends and drivers, such as emerging threats, associated with hybrid conflict. Analysis and knowledge, gained from understanding such emerging threats, will undoubtedly inform policy on neutrality, as well as defence and national security, and are likely to shape the future of the Defence Forces. In addition, a

horizon-scanning process, that delivers continuous monitoring of such emerging threats, will inform the public discourse on this topic, iteratively and periodically. The perceived ‘benign security environment’, suggested by established and well understood threats, is unlikely to initiate a change in the state’s long-held policy of neutrality. Conversely, those emerging threats identified by horizon scanning may well invigorate the debate on military neutrality. The employment of horizon scanning in the Defence Forces is not only beneficial to the organisation, but also to government and wider society, in facilitating enhanced understanding of such complex issues as Ireland’s neutrality policy.

Horizon Scanning and the avoidance of Strategic Shocks

At this point it is worth examining the utility of horizon scanning in avoiding strategic shock. Freier (2008, p.2) proposes that, without “continued and more sophisticated horizon scanning, there is near-certainty that the next compelling defense relevant challenge will be a strategic shock.” This is a sobering assessment. What might constitute a strategic shock in an Irish context? For the Irish Defence Forces, it could be a disruptive event, that would render the organisation unable to perform one or more of the roles assigned by government. The Commission on the Defence Forces (CODF, 2022, p.10) acknowledges that the, “proliferation of state and non-state actors and the growing interconnectedness, including in the information sphere, creates an inherently unpredictable system, in which national and global shocks and surprises at strategic, operational and tactical level may occur despite the best intelligence and analysis.” A tactical- or operational-level reverse for a European state, within the sphere of Ireland’s neighbourhood, whether kinetic or non-kinetic, will likely deliver effects here in Ireland.

Freier (2020, p.4) posits that, in Rumsfeldian parlance, there “are ‘unknown unknowns’ and ‘known unknowns’ relevant to defense planning” and, “[b]oth capture the concept of shock.” He further defines that the ‘unknown unknowns’ are “rare, high-impact events only predictable with the benefit of hindsight and a reconstructed reality” while the ‘known unknowns’ are “recognized uncertainties much likelier to emerge as actual problems in the real world (Freier, 2020, pp.4-5).” Consequently, Freier (2008, p.36) recommends that, “[p]reemptive examination of the most plausible ‘known unknowns’ represents a reasoned down payment on strategic preparedness and an essential defense investment in strategic hedging against an uncertain and dangerous future.” This is a very

logical assertion from an intelligence analyst's perspective, given that intelligence assessments are based on strong signals of future events. However, it is this second order knowability of the 'unknowns' that differentiate the 'domain of experts' from the 'domain of emergence' in the Cynefin framework.

While Freier (2008, p.35) agrees that defence should, "continue its commitment to identifying and analyzing the most credible unconventional shocks on the strategic horizon", he argues that priority should be focused on those uncertainties which are 'knowable' over those which are 'complex'. This prioritisation may be misplaced; second order knowability of the 'unknowns' is an indicator of their uncertainties, it is not an indicator of their impacts. Neither is it an indicator of their likelihood; 'Unknown unknowns' are defined as such, not because they are unlikely, but because they are unforeseen and not well understood. Once they have been identified, and interrogated sufficiently through horizon scanning, intelligence analysts can assess whether they are likely or unlikely.

In this regard, horizon scanning can be seen as supporting activity the Intelligence function in the avoidance of strategic shock. If the intelligence function is to hedge its efforts and resources against those sources of strategic shock that exist in 'knowable space', then the proposed horizon scanning model provides synergy, and offers the Defence Forces an effective means to identify those sources that exist in the 'complex space'. These are 'Unknown unknowns' or 'black swans', that exist as faint signals of emerging threats, and have the potential to manifest as strategic shocks with as much severity as those from 'Known unknowns'. The avoidance of strategic shock is a priority for Intelligence, and there is definite merit in horizon scanning augmenting the Intelligence function, to generate more complete outcomes.

The utility of Horizon Scanning in Intelligence

While Gustafson (2010, p.610) makes clear that, "horizon scanning is not purely an intelligence function" and that it, "deals with plausibilities rather than probabilities", he concedes that the, "position of a horizon scanning function within the intelligence structure" makes "a great deal of practical and theoretical sense." Whether a horizon scanning function should sit within the intelligence function of the Defence Forces, or remain separate, requires further exploration. What is clear is that, "horizon scanning can

be extremely informative and useful” and “interacts with intelligence in a beneficial fashion (Gustafson, 2010, p.595).” Therefore, for the Defence Forces to establish a horizon-scanning model within the organisation and ignore its obvious applicability to intelligence would be folly. This is particularly true given the limitations of long-term intelligence assessments in an increasingly complex international security environment. Quiggin (2007, p.51) argues that, “long term predictions cannot be made.” He makes this argument based on a belief that, “long term predictions can only apply to systems that are isolated, stationary and recurrent. These systems rarely exist in nature and the modern international system is not one of them.” Therefore, under such conditions of uncertainty, where, what is predictable or probable is not possible, horizon scanning intercedes and gives us what is plausible.

Gustafson (2010, p.596) proposes the real utility of horizon scanning to intelligence analysts is that it can highlight, “those avenues of investigation which otherwise might have escaped them.” In other words, while intelligence analysts are caught up in current intelligence, horizon scanners, “can explore other avenues and offer cues for avenues of analysis which depart from the apparent norm.” This greatly facilitates the avoidance of strategic shock and intelligence failures. As discussed in the preceding section, horizon scanning has a significant role to play in the avoidance of shocks, and “has the potential to fill the need for strategic and long-term intelligence reporting (Gustafson, 2010, p. 591).” Long-term intelligence reporting is particularly useful in providing early warning of impending crises. Kriendler (2006, p.5) posits that the, “benefits of early warning of emerging crises are obvious” in that it, “provides more time to prepare, analyze and plan a response.” For the Defence Forces, the Intelligence arm should utilise the proposed horizon-scanning model to focus specifically on long-term intelligence reporting, to provide early warning of emerging threats and impending crises and consequent strategic shock. This specific brief within the intelligence structure, coupled with the Directorate of Intelligence providing initial guidance, and setting the scope of the scan during the method’s calibration phase, will ensure duplication of effort is avoided.

Conclusion

Alotaibi (2020, p.19) notes that an “organisation may be viewed as a system capable of scanning and acquiring information from its environment, and then storing, interpreting

and distributing that information.” Hughes and Hodgkinson (2021, p.241) suggest that an organisation that is adept at this capability, “can develop stronger dynamic strategic planning capabilities to sense, seize and reconfigure in their strategizing.” Certainly, the adoption of the proposed horizon-scanning model, and the establishment of good practice in horizon scanning, will enhance the Defence Forces’ current strategic-planning process. Rather than a annual plan providing mere snap-shot, strategic planning within the Defence Forces should be “an adaptive process where piecemeal decisions are taken over time following a pattern based on continuous feedback between formulation and implementation (Missiroli, 2013, p.4).” The proposed horizon-scanning model provides this continuous feedback, by harvesting information in the security environment. The Commission on the Defence Forces (CODF, 2022, p.30) also notes that there, “is a notable absence of overarching, and permanent, structures that are needed to guide the management of current and future capability development.” However, integrating horizon scanning into strategic planning and capability development within the Defence Forces may be problematic in the short term, as overburdened senior military leaders see “too much at stake in the near-term to countenance instituting disruptive institutional change that is predicated on predictive analysis (Freier, 2008, p.1).” However, this is cognitive bias, and the proposed model for horizon scanning can be integrated into a holistic strategic-planning process with relative ease.

While McGourty (2020, p.13) argues that, “the aim of defence planning, at its most fundamental level, is to limit this condition of uncertainty to ensure survival of the state”, Freier (2008, p.1) recognises that there is a tendency within senior military leadership to “naturally err on the side of what is known and practiced at the expense of preparing for what is less well-known but perhaps more dangerous.” The Irish Defence Forces is no different in this regard, and a horizon scanning model will go some way in mitigating this cognitive bias. Nevertheless, the fact remains that “[d]efence capability planners have to design and engineer capabilities for the challenges of both today and tomorrow (De Spiegeleire, 2011, p.23).” If the Defence Forces is to avoid strategic shock, and ensure it continues to deliver its assigned roles from government, then a horizon-scanning model is an imperative; Gustafson (2010, p.591) emphatically argues that, “horizon scanning is a critical function of intelligence in the modern world.”

CONCLUSIONS

Introduction

This thesis explores the question of how the Defence Forces of Ireland can effectively horizon scan for emerging threats to the Irish State. A distinct gap was identified in the literature, with a dearth of research concerning militaries' contribution to State and societal resilience in the face of emerging threats. This study examined different foresight techniques, with an emphasis on horizon scanning, as means to identifying emerging threats to the State. Van Rij (2006, p.1) establishes that horizon scanning can, "help surface the major (scientific and political) questions that require answering in order to make strategies more robust and more resilient." Horizon scanning will be an invaluable tool for the Defence Forces, as it seeks to identify, understand, or pre-empt, evolving threats and challenges of the future. This research draws a number of conclusions that enhance understanding of horizon scanning in a military context, and identify how the process may be applied within the Defence Forces, to the benefit of Ireland; government, society, and citizenry.

Horizon Scanning at State Level

The "*White Paper on Defence* (2015) sets out the Government's commitment to maintain, and further develop, a robust strategic emergency management framework nationally" (DoD, 2021b, p.8). Furthermore, it notes that, "the production of ... A National Risk Assessment for Ireland...is a constituent part of this work." As part of its further development, and following research by the current author, "[h]orizon scanning was introduced as part of the NRA 2020 process (DOD, 2021b, p.35)." The horizon-scanning methodology employed in the NRA process, included the identification of emerging risks or threats by subject matter experts, through research and consultation with their parent departments and agencies. This methodology gave a snapshot, or static assessment, of potential emerging threats at the time of publication. However, it did not perform an iterative, ongoing, scanning function. The intent was that, the "identification and recording of such emerging risks within the NRA was undertaken to ensure ongoing monitoring for early warning signs which might trigger mitigation measures or require escalation into the NRA process (DOD, 2021b, p.22)." If, as recommended, government

departments and their agencies are to monitor the early warning signs of emerging threats on an ongoing basis, and if they are to be in a position to trigger mitigation measures, then there is a requirement and an obligation on each state agency to develop a methodology for horizon scanning.

Recommendations

Given Government's commitment to enhanced emergency management (DOD, 2015) there is an implied imperative that an horizon-scanning model should be established within the Defence Forces. The foregoing delivers implied mandate for this research. Enhanced understanding of horizon scanning follows, and leads to generation of a number of explicit recommendations. These recommendations will improve outputs for a number of functions within the Defence Forces, and significantly enhance the organisation's ability to identify and mitigate future threats to the State, while identifying potential opportunities for exploitation.

The establishment of an iterative Horizon Scanning model

A key finding of this research was that, despite the obligations of lead government departments, and all state agencies, to conduct horizon scanning particular to their own areas of expertise and responsibility, the Defence Forces is well positioned to provide the function for the Irish government and society. This is particularly true for the identification of emerging threats that have a national security or a defence implication. Of course, to guarantee continued utility, there needs to be a continuous process of monitoring for weak signals of emergent threat, both nationally and globally. The establishment of an iterative horizon-scanning model within the Defence Forces is the means by which the organisation can deliver this dynamic capability to the Irish State and its people. This remains the central recommendation of the research.

The requirement for a bespoke model for Horizon Scanning

Having ascertained the requirement for an iterative horizon scanning methodology, consideration was given to a suitable model for the Defence Forces. Given the unique nature of the Defence Forces' needs, a bespoke model of horizon scanning was favoured over a more generic model. Examination of different methodologies, across a number of disciplines, identified the optimum components for the Defence Forces. A bespoke,

conceptual, horizon-scanning framework for the Defence Forces is proposed in Chapter Two. This proposed model follows a six-step process; calibration, detection, filtration, prioritisation, assessment, and dissemination. This bespoke model, if implemented, will facilitate effective Defence Forces' horizon scanning for emerging threats to the state.

Horizon Scanning Cell nested within Strategic Planning Branch.

The question of 'where' to locate the horizon-scanning process within the Defence Forces organisation was then examined. The research findings suggest that, while horizon scanning has excellent utility in the Intelligence function, there is a strong argument for retaining it elsewhere, in order to facilitate distinction between the predictable and the plausible. The competing case, to establish a Horizon-Scanning Cell within Strategic Planning Branch, is stronger. The study also concluded that co-locating a Horizon-Scanning Cell with the RTI Cell, which is itself located within SPB, would facilitate information sharing and mutual support of their respective functions. The foregoing reinforce the recommendation of this study, to establish a Horizon-Scanning Cell within Strategic Planning Branch.

Composition of a Horizon Scanning Cell

The analysis concluded that generalists are more critical to the process than specialists in horizon scanning. However, the specialists' expert opinion should be called upon when required, in particular when addressing the scope of individual scans. Findings also identify the importance in acknowledging that those generalists should be considered specialists in horizon scanning, and related disciplines, such as risk assessment and strategic foresight. It is recommended that any staff organisation, for a dedicated horizon-scanning cell, should include general analysts with a knowledge of risk assessment and strategic foresight. The horizon-scanning cell should have the authority to set up planning and working subgroups, and appoint subject matter experts and specialists, in the content and topic under investigation specific to designated horizon scans, as required.

Information sharing of Horizon Scanning products with Intelligence

The research concluded that continuous monitoring of emerging threats and opportunities, by a dedicated horizon-scanning cell, will iteratively inform capability development and research & development, within an overall strategic-planning context,

while also making a valuable contribution to intelligence assessments. It is therefore recommended that, the products and data harvested from the process of horizon scanning be shared and communicated across these functions, to avoid strategic shock and intelligence failure. This affords the intelligence function an opportunity to independently consider the possible or plausible, facilitating the inclusion of an additional layer in its intelligence assessments, and generating optimum outcomes in the face of complex and uncertain futures.

Value of this research to the Defence Forces

The utility of horizon scanning to a broad range of functions across the Defence Forces has been outlined in Chapter Three. However, the value of this research goes deeper than a summary of the benefits of horizon scanning. The research is timely, given that the Commission on the Defence Forces (CODF, 2022, p.iv) acknowledges that the, “Threat and Risk Environment looking out to 2030 (and beyond) remains complex and unpredictable” within which there exists, “interrelated trends that are of particular importance in shaping the future security environment in which the Defence Forces must navigate”. Similarly, the updated White Paper on Defence (DOD, 2019, p.13) concludes that, “the future security environment cannot be predicted with certainty and there will always be unknown future threats”. In this context, the utility of horizon scanning to the Defence Forces is clear and consequently there is great value in research of how it may be implemented within the Defence Forces. This study assesses the feasibility of implementing such an ambitious function and offers a blue print as to how it can be achieved. Most significantly, this study proposes a practical model for delivering horizon scanning within the Defence Forces.

Final Reflection

Recent global events demonstrate the fragility of global security, given the disregard shown by Russia towards the rule-based system of international order. In an Irish context, the Russian invasion of Ukraine has re-focused Irish policymakers’ interests on Ireland’s national defence and security, and renewed debate about a long-held policy of military neutrality. The implications of Russia’s illegal invasion, and related activities, are being felt far beyond Ukraine and Russia. Indeed, the recent simulation on Russian state television, of a Russian nuclear attack on the United Kingdom, represents a most insidious

threat to Ireland. While Intelligence analysts were quick to debunk its credibility as a viable threat, and dismiss it as propaganda, horizon scanners will consider it a weak signal of an emerging threat to the State. Miles and Saritas (2012, p.531) note that a difficulty for horizon scanning is, “to uncover and challenge conventional and deep-rooted expectations, without being dismissed by all key audiences as wild or dangerous.” This was not an isolated threat, with Ireland experiencing new threats in recent years from hybrid means, including cyber-attack and disinformation. The Defence Forces must develop the capability to adapt and respond to these new threats, if it is to protect the State, its people and its resources. Horizon scanning, which detects new and emerging threats while simultaneously informing capability development and strategic planning to counter and mitigate against these emergent threats, is a key component of this capability.

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