Technology and the Roadblock. When Change Meets Organisational Culture

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History shows us that success on the battlefield is not guaranteed to the side with the higher level of technological advancements. The competitive edge often resides with those who learn how to account for and integrate the required change that technology demands. This is more relevant now than ever before, given the nature of current global geo-political great power competitions. This study investigates how military leaders can manage technological changes within their organisations. Specifically, this research examines the utility of John Kotter's Eight-Step change management theory as a potential framework. This research cross analyses a review of contemporary change literature with data from semi-structured questionnaires from current military leaders. Four main themes emerge from this primary research: 1.) Military change is constant and technology plays a vital part, 2.) Leaders influence organisational culture which impacts change, 3.) The military relies on a leader's abilities and not a formalised process and 4.) Current military culture inhibits Kotter's Eight-Step Model. The research findings further identify the potential positive implications for institutionalising formal change management training into professional military education to equip leadership with a roadmap to managing change and further enhancing current organisational culture.

The twenty-first century has ushered in renewed great power competition between the United States (US) and both Russia and China. This strategic competition is directly challenging US military advantage in the air, land, sea, space and cyberspace domains (Mattis, 2018). In his 2018 National Defence Strategy (NDS), US Secretary of Defence Jim Mattis (2018) attributed the rapid development of technology as a cause for this challenge. For this reason, the 2018 NDS prioritised strategic competition with both countries. In acknowledgment of this challenge, the US Army has implemented its own modernisation strategy. The end state of the 2019 United States Army Modernisation Strategy (AMS) is to be capable of conducting multi-domain operations (MDO) as a part of an integrated joint force by the year 2028 (Grinston et. al, 2019).

The AMS approach relies heavily on the integration of emerging technology. Grinston et. al (2019) note that a key modernising component is persistently adjusting with technological advances. This includes new technologies to defend forces, distribute command and control and ultimately converge effects from multiple domains (Grinston et. al, 2019). The

most senior US defence officials have made it clear that technology will play an integral role in maintaining a competitive edge. While the NDS and AMS are top-down driven visions, they will inevitably be supported by the organisational leaders through a bottom-up execution. The Army needs leaders capable of streamlining technology into the business of leadership (Hildebrand, 2020). Inherent in this execution, will be the leader's ability to manage this competition-driven change. This paper aims to explore how military leaders can manage organisational change driven by technology as a result of current great power competition.

The Problem

"While the stresses of combat have been constant for centuries, another aspect of the human dimension has assumed increasing importance- the effect of rapid technological advances on organisations and people."
- Army Doctrinal Publication 6-22 (2019, p. 101)

Technology can manifest in multiple forms, bringing challenges that impact the physical and social environments. It can be tangible as physical hardware, such as weapons systems or computers. This affects change in "what" the Army fights with, perhaps requiring a change in tactics based on new capabilities. Less visibly, technology manifests the requirement for human interactive change. The introduction of new technology can alter "how" the Army fights, which requires likewise adjustments in leaders' behaviour. Firlej and Kluz (2016) highlight that today's leaders must be able to understand technological trends and have a vision for their effective use. This is not to say that traditional leadership attributes or techniques have become obsolete. It is now the case that the traditional will co-exist with new factors (Firlej & Kluz, 2016). The introduction of emergent technology will require deliberate organisational integration by leadership at every level. The Army is a large organisation comprised of a multitude of sub-organisations. They are geographically separated and designed to conduct separate missions that contribute to an overall service goal. This leads us to the central thematic problem. How does an organisation ensure acceptable levels of change integration throughout nested sub-organisations over multiple layers? More specifically for this research, is the need to explore how leaders can manage technologically driven organisational change.

Current Army Doctrinal Publication 6-22 (ADP 6-22) recognises this challenge. The doctrine states, "Technological changes and the speed at which they occur force the Army and its leaders to adapt and respond" (ADP 6-22, 2019 p. 101). The doctrine seems to suggest the decentralised management of change to individual leaders throughout the organisation. Scales and Van Riper (1997) assert that war will remain a contest of human will and not machines. Leaders are at the core of this human dimension. Leaders set the direction for the organisation and have an immense influence on its success or failure. The willingness to accept and implement change is a personalised challenge. It often involves changing one's mind to discard what may have worked in the past. As Gerras and Wong (2013) point out, changing your mind is more than an individual challenge. It will involve social interaction between those leading and those being led. Out of this complex challenge, fall related sub-problems.

Sub-Problems
Current emerging technological modernisation presents leadership with a further challenge. The expertise they have attained through their careers was likely built on systems or processes that have changed as the result of technology. Gerras and Wong (2013) note that expertise is

invaluable until the context changes. It appears that technology is currently changing the context for the military. Significant technological developments are rapidly transforming society and the character of warfare (Department of the Army, 2019). Each new wave of recruits into the Army has had increased exposure to emerging technologies. Technology has influenced a societal demographic shift, creating a pool of eligible military recruits that come from a different generation than the current leadership. This may challenge the frames of reference established by current middle and senior leaders. This presents potential cultural friction within the organisation. Is the military structure capable of shedding decades of tradition and devolve from a "this is how we have done things in the past" mentality? How do organisational leaders manage a cultural change within the military, to achieve integration while fully utilising, training and retaining their workforce?

Research Relevance

"For the Army, the ultimate drivers of the future will depend largely on the imminent decisions we make today with respect to strategy and policy, innovation, and adaptation."
- Training and Doctrine Command Pamphlet 525-92, (2019, p. 25)

It is hard to deny the global effects that technological advancements afford. Firlej and Kluz (2016) feel that advancing technology is influencing our lives like never before. Take for example that the world's largest taxi company, Uber, does not own a single taxi (Firlej & Kluz, 2016). Furthermore, recent global events have placed an ever increased reliance on technology. The Corona Virus 2019 (COVID-19) pandemic rapidly sent societal and military organisations online to an unprecedented degree. Defence forces around the world recognise the importance of remaining credibly relevant through technology based modernisation. This will require direct organisational adaptation.

Undoubtedly the stakes are high for any defence force to modernise. This research is not designed to address why the military should integrate technology to enable modernisation. It aims to research how leaders can properly manage the organisational changes that spawn from it. Current US Army doctrine identifies the importance of identifying and influencing change, but it appears to fall short on presenting how to manage this change. While the focus of the research involves the US Army, the concepts, situation and themes remain relevant to any defence force looking to integrate emergent technology into their organisation. Furthermore, the research remains integral to the study of command and leadership. States depend on their militaries for defence and as instruments of leverage in the geopolitical climate. In turn, the same militaries rely heavily on leaders to carry out the objectives that support state intentions. A disjointed, anti-change military could have catastrophic implications for entire nations. Furthermore, this research will remain relevant to raise awareness that the operating environment is changing.

PART ONE: Literature Review

The focus of this section is to discuss and conduct a critical review of literature to answer the research question: *how can leaders manage technologically driven change within their organisations*? The literature review discusses and defines organisational change and various typologies. This sets the foundation to assess theoretical frameworks to identify and discuss organisational change components. Once these components are identified, Part One critically evaluates change management theories as a means to overcome the identified challenges. In analysing these theories, the review also acknowledges and discusses limitations to the

theories before transitioning to literature suggestive of an adaptive approach to change management. Finally, the review concludes with a summary.

The current geopolitical climate and ongoing great power competition places the United States (US) amid a multi-dimensional race to outpace the technological advancements of its adversaries. While advances in technology can certainly enable and enhance a range of capabilities, it conversely presents military organisations with daunting challenges. Simply having advanced technology is not enough. Organisations must change to remain relevant and use the tools of their trade. This change is driven by technology (Milley, 2020). At the forefront of this change are the organisational leaders. The country that masters the technology with the proper organisations and leadership development will have a decisive advantage in the next conflict (Milley, 2020). This paper explores how today's military leaders can overcome the challenges of managing the change required to adapt within an era of rapid technological advances. This begins by briefly describing a salient historical example of an organisational reaction to technologically driven change.

History as a Barometer
Technology has changed the tools with which war has been waged for years. A prime example that illustrates this process is the development of the tank. In the late nineteenth century manufacturers placed treads on farm tractors to work in muddy fields. This innovation gave the German, British and French militaries an idea to develop a vehicle capable of supporting combat operations. The creation of the tank would be the "solution" to penetrate the trench warfare of World War I (WWI). The British were the first to develop a tank, however, it performed poorly when first used at the Battle of the Somme in 1916. Blank (2020) surmises the system failed because the technology was immature and there was no prior learning of how to coordinate its use. Despite the important role played by Allied tanks in the battles of 1918, most militaries failed to fully exploit the possibilities of the tank in the years after WWI. However, the Germans (who had few tanks in WW1) continued maturing the technology and changed their organisation to develop integrated tactics. The result was a lethal and agile German Army capable of wreaking devastating havoc in the Second World War. As history suggests, often the ones who best exploit a new technology is not the inventor, or the first user (Blank, 2020). The Germans were not the first, but they embraced the technology and adapted the organisation to incorporate the tank. Using this historical example as a foundational barometer, this research will explore the contemporary change context that leaders must manage. This begins by establishing what change is.

Organisational Change
Military organisations share many of the same characteristics as large businesses and companies. The military has capital assets, a diversified workforce and has expected outputs. Spoehr (2014) points out that the US Army has a larger vehicle fleet than FedEx, its installations produce as much energy as the city of Tampa and it would be a Fortune Top 20 company if its budget were revenue. Today's societal and operating environments affect both civil and military organisations. Best practices, lessons learned and processes are often shared between the two. While attempting to acknowledge and identify the regulatory and cultural nuances of the military, it can generally be considered as a large-scale corporation. The Centre for Creative Leadership (2020) notes that organisational change today is often complex and continuous. The military's operating environment (OE) is changing as a result of fast-paced twenty-first century advancements. The Department of the Army (2019) notes that the transformative impact of technology is evolving the OE and places the Army at the precipice

of change. Organisations need to understand the nature of the change they face. It is plausibly difficult to address something if you cannot first identify it. How change is defined and categorised is the first logical step in this process.

Types of Change

In its most basic terms, change can be categorised as planned or unplanned. Planned change occurs when deliberate decisions are made in an organisation and unplanned change results from unforeseen occurrences (Allison, 2013). Both planned and unplanned change can be separated into the categories of rapid and incremental. Rapid is an all of the sudden change and incremental occurring over time. Several models have been designed to categorise change in further detail. The first model to consider was developed by Grundy (1993), illustrated in Figure 1. He describes three types of change as smooth incremental, bumpy incremental or discontinuous.
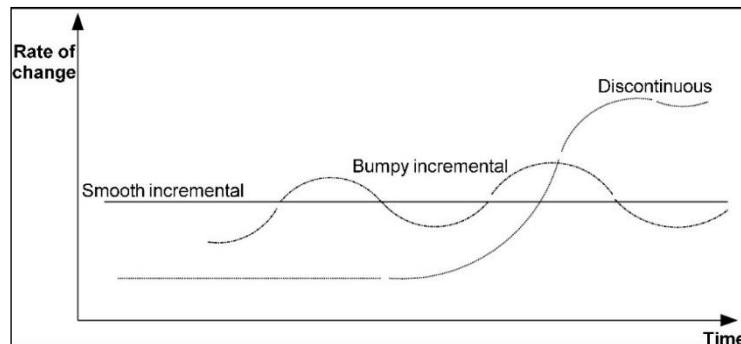

Figure 1. Grundy's Types of Changes (Grundy, 1993, p.25)

Grundy (1993) suggests that incremental change manifests itself as either smooth or bumpy. A smooth incremental change is characterised by a systematic and predictable rate. In a military context, this type of change is often experienced in the planned and programmed rotation of key leaders or scheduled reassignment of soldiers within the organisation. Grundy (1993) supposes that a bumpy incremental change occurs when periods of relative calm are punctuated by an accelerated pace of change. This could be triggered by an external operating environment or from internal instigation. For the military, this would occur as the response to emerging threats or a great power competition. Grundy (1993) defines a discontinuous change as one that is marked by rapid shifts in organisational culture, structure, strategy or all three. This rapid change could be caused by environmental turbulence or technological advancements. A very real and contemporary example is the military's forced response to the Corona Virus 2019 (COVID-19) global pandemic. Although pertinent and relevant to understanding change, Grundy's model has been criticised for being somewhat simplistic. Moravu (2020) points to the model's simplicity and notes that Grundy himself admits the model is founded on observation and not research. Furthermore, the model appears to lack specificity to address the extent and intensiveness of change.

To address the extent of change, Ackerman Anderson and Anderson (2020) classify change as developmental, transitional, or transformational. An illustration of this can be found in Figure 2. Ackerman Anderson and Anderson (2020) define developmental change as people and process-orientated improvement. In this sense, the change enhances the existing organisation and can be planned or emergent. This is the easiest type of change since nothing new is being created (Ackerman Anderson & Anderson, 2020). Transitional change seeks to achieve a state that is different from the current organisational existence. This type of change is more extensive, in that the organisation must simultaneously dismantle while the new state

is put into place (Ackerman Anderson & Anderson, 2020). Transformational change is the radical change from the previous state to a new one. This type of change is the most difficult and most intensive. Since the future state is so radically different, the people and organisational culture must change. (Ackerman Anderson & Anderson, 2020).
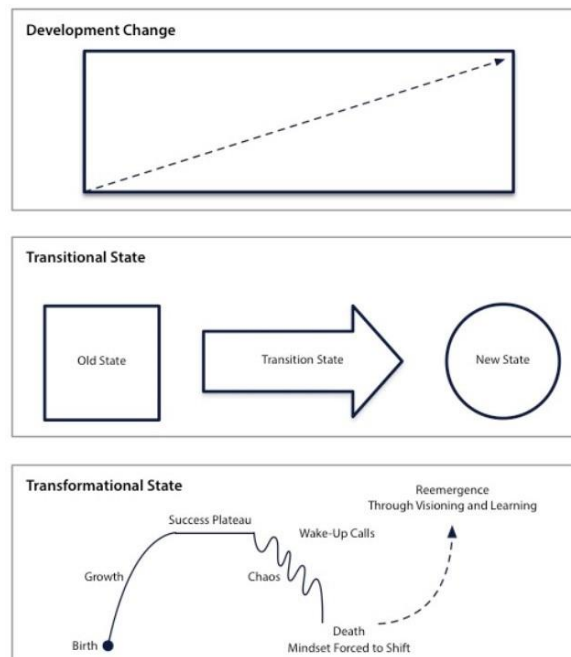

Figure 2. Classifications of Change (Ackerman Anderson & Anderson, 2020, p. 53)

In addressing the intensity with which change occurs, Dunphy and Stace (1993) propose a scale of change. Dunphy and Stace (1993) identify four categories of change: 1) fine-tuning change reflecting small people or process adjustments at low levels; 2) incremental change describing direct efforts from high levels to alter strategy or process; 3) modular transformation describing structural changes to reclassify sections; and 4) corporate transformation characterised by drastic strategic changes that affect the entire organisation. When compared to Grundy's model, fine-tuning and incremental change provide a more refined approach to smooth incremental change. Similarly, modular and corporate transformation lends additional definition to Grundy's proposed bumpy and discontinuous change respectively. Having established what change is, an organisation must then move to frame these forces in context. Effective identification and subsequent change management likely require a more complex mapping of change influences and forces.

Framing Components of Change
The ability to identify and describe the problem is an imperative for organisations to effectively address and mitigate meaningful change. Leaders must identify "what" is precipitating change. Gundel (2005) defines four categories of crises as a representative way to understanding how change unfolds. His model consists of two variables; the predictability of a crisis and the organisations ability to influence said crisis. A crisis is predictable if the place, time or manner of its occurrence is knowable to at least a third party (Gundel, 2005). The same crisis can be influenced if responses to reduce damages by antagonising the causes are known and executable (Gundel, 2005). Each of these variables are expressed in terms of easy or hard. By assigning a crisis in terms of predictability and ability to influence, Gundel proposes four types of crisis identified as conventional, unexpected, intractable and fundamental. See Figure 3 below for Gundel's original crisis matrix.
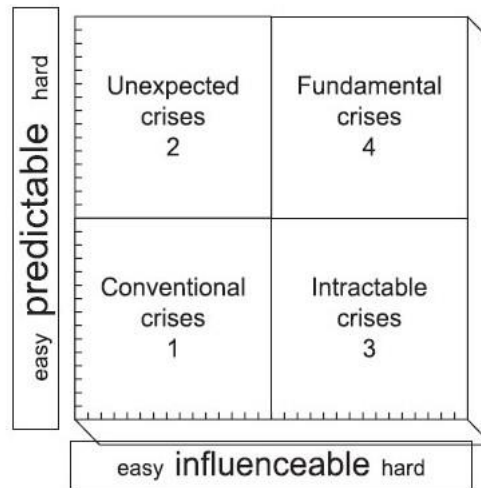
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Figure 3. Gundel's Crisis Matrix (Grundel, 2005, p. 112)

Gundel (2005) further refines and provides a plausible crisis example for each of the intersecting quadrants. A conventional crisis located in quadrant one is both predictable and easily influenced. Gundel (2005) supposes that a crisis of any scale in technological systems fills the bulk of conventional crises. An unexpected crisis is sensitive to influence and difficult to predict. He offers, as an example, an engineless train in Austria catching fire and burning to the ground and killing 151 people as an example (Gundel, 2005). An intractable crisis is easy to predict yet difficult to influence. Gundel uses the Chernobyl nuclear disaster as a prime example of an intractable crisis. Finally, a fundamental crisis signifies the most dangerous of the four. It is difficult to both predict and influence. Some of the most common examples of a fundamental crisis are the terror attacks of 9/11 (Gundel, 2005).

Gundel's typology of crisis seemingly assists in defining large, singular thematic causations for change. His model could perfectly account for a crisis such as the Corona Virus 2019 (COVID-19) pandemic. While COVID-19 will be discussed in this paper, it is a singular event that adds to the totality of the current environment that the military finds itself. The current geopolitical environment has become increasingly complex as introduced above. It may be problematic to ignore the multitude of simultaneous influences facing today's military. This proves true if one thinks of modern crisis as ongoing processes embedded in an ever-expanding and technologically interconnected world. A more fitting framework would account for the identification of multiple simultaneous competing components of change. In addressing a similar context, renowned theorist Kurt Lewin proposed the "Force Field Analysis."
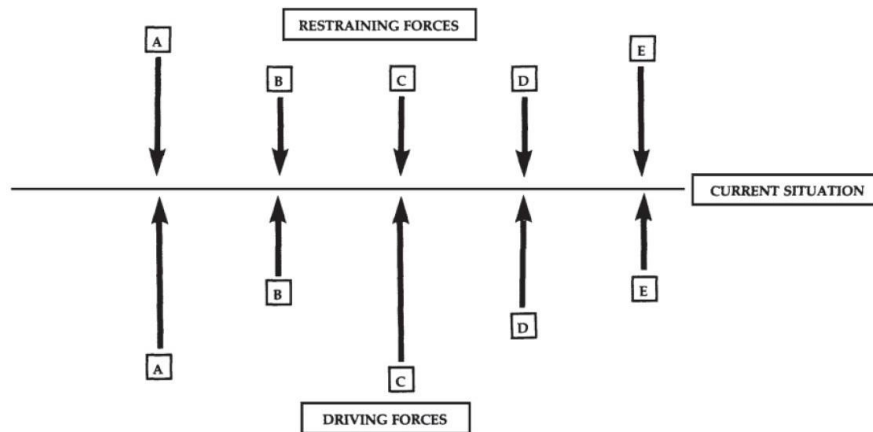
2.5 Force Field Analysis

Figure 4. Lewin's Force Field Analysis (adapted Fossum, 1989, p.13)

Fossum (1989) points out that the first step in applying Lewin's analysis is to begin with defining the problem. In a broad context, Fossum's statement is foundational to solving any problem, not just organisational change. However, in the context of this paper, Fossum's interpretation of Lewin's work will be explored in terms of identifying the conditions that force or inhibit change in military organisations. Lewin (1951) proposes that there are two main factors or pressures that support change in any direction. The first of which is referred to as driving forces. In short, these are the influences both internal and external, which are requiring an organisation to change. The second of Lewin's pressures are called restraining forces. These are influences both internal and external, which work to prevent and organisation from changing. It is the balancing and management of these two opposing forces that create an organisations "current situation." An organisation is considered stable when influences pushing change (driving forces) are equal to the restraining forces (Fossum, 1989). Figure 4 above depicts Lewin's Force Field Analysis. Using the Force Field Analysis is a useful way of mapping the complexity of influences within the military's operating environment. This can be accomplished by identifying the agents for change (Figure 5) and plotting the characteristics of the military organisation that are restraining those driving forces (Figure 6), resulting in a basic framework for identifying the need for change management. The next seven sub-sections will explore a series of proposed contemporary driving and restraining forces.
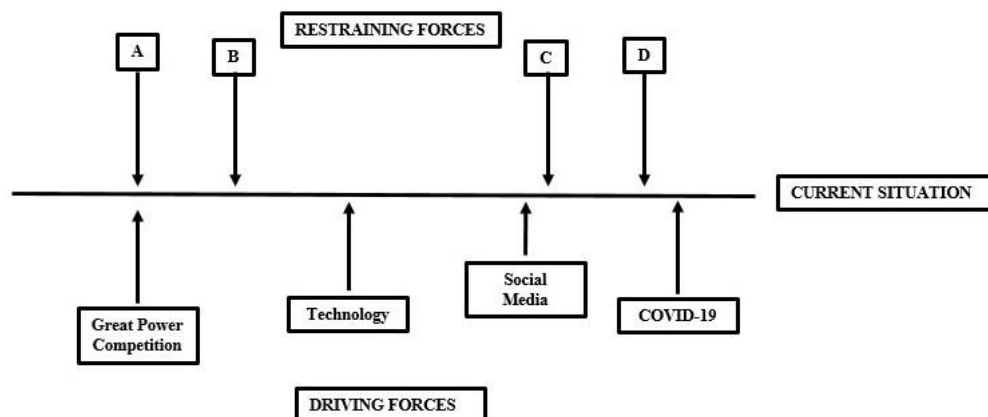

Figure 5. Lewin's Force Field Analysis Adapted with Current Driving Forces

Driving Force 1: Geopolitical Power Competition

Today's world is an immensely interconnected geopolitical web giving way to a new great power competition. Acknowledging the totality of key stakeholders, this paper focuses on current geopolitical relationships between the United States (US) and the People's Republic of China (PRC). This competition forms the basis for technology as a change agent. The central challenge to US prosperity and security is the re-emergence of long-term, strategic competition (Mattis, 2018). Chinese General Secretary Xi Jinping (2017) discussed his intent to turn China into a "nation of innovators" in an address to the PRC Congress. The goal is to strengthen the PRC armed forces through reform and technology (Xi, 2017). This is accomplished by leveraging a civil-military fusion (CMT) and harnessing the industrial-based technology sector. Brown et.al (2020) discusses the military linkage between China's advancements in 5G communications and quantum technologies. China's rapid developments in these fields can provide reduced latency for military applications, assist in decryption and advance materials science (Brown et. al, 2020). The US has responded by investing massive amounts of time and funding to gain a technologically enhanced competitive edge over China. This concern is addressed in the latest US National Defence Strategy (NDS). The US aims to modernise key capabilities within newly defined space and cyberspace domains. The Department of Defence intends to do this through investing in command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) systems (Mattis, 2018). This pursuit has formed the basis for creating a new technologically based joint and multi-dimensional battlefield of the future. The introduction of these new dimensions of warfare and the ensuing competition has given rise to technological advancements. It is the rapid introduction of new technologies that form the basis for the next driving force.

Driving Force 2: Technological Advances

Advanced technology has had a profound impact on the military's use and implementation of its Mission Command (MC) philosophy. The US Army Doctrine Reference Publication (ADRP) 6-0 identifies six MC principles; build cohesive teams through mutual trust, create shared understanding, provide clear commander's intent, exercise disciplined initiative, use of mission orders, and accepting prudent risk. While no single principle is more important than another, technology has had a visceral effect on creating a shared understanding and subsequently on accepting prudent risk. Shared understanding is building and maintaining awareness of the operating environment, purpose, problems and approaches to solving them (Department of the Army, 2019). Accepting prudent risk involves the deliberate and calculated exposure to potential injury or loss when a commander deems the outcome worth the cost (Department of the Army, 2019). The overarching goal of MC is to provide leaders at all levels the ability to command and control (C2) in a decentralised environment, through the perceived fog of war. Historically, limited means of gathering and transmitting information meant that leaders far from the battle lacked situational context (Hill & Niemi, 2017). There have been immense advancements in systems that enable leaders at all levels to increase their situational awareness of the battlefield. These range from enhanced positioning technology on smartphones to drones that fit in the palm of a hand. Enhanced radio technology enables the "flattening" of traditional military communications. Bachman (2020) notes that US Army is fielding an integrated tactical network (ITN) capable of creating a flat network comprised of hundreds of radios. Subordinates now have technological systems that provide real-time awareness and communication within their surroundings. Historically such enhanced capabilities resided with senior command levels above the average soldier. With this readily available data, subordinates could second guess decisions made by superiors or undertake

actions deemed inappropriate (Alberts, 1996). This has a direct effect, both positive and negative which leaders must take into account within the construct of MC.

The use of and reliance on technology also presents an inherent attack point for adversarial forces. This is important when considering how reliant the US military has become on technology and connectivity. America's enemies have displayed a marked ability to exploit technological systems (Wike, 2016). The threat is exponentially exacerbated when considering China's increasing cyber and tech-enabled capabilities. The problem is equally as dangerous if the technical system simply fails. The resulting outcome, in either event, requires redundancy. Leaders cannot fail to plan and train for these dangers. The potential compromise or lack of technology often compounds uncertainty on the battlefield (Wike, 2016). This uncertainty presents the very same conditions that MC is designed to overcome.

Social Media

Technological advancements present challenges to Army leaders, including ethical considerations (Department of the Army, 2019). These challenges are driving change from operational considerations to daily communication and personal conduct. Singer and Brooking (2018) note that technology, especially social media, has blurred the lines of war and reshaped the environment in which battles are fought. Technology and the internet enable instantaneous data transfer as a highly impactful and exploitable tool. Donahoe et. al (2020) explain the value and importance of senior leaders within the US military to embrace and incorporate social media as a medium for engaging subordinates in a more transparent manner. Social media can cultivate influence, help understand military families, lift marginalised voices and connect through interaction (Donahoe et. al, 2020). More importantly, its use can help break through the military hierarchy and bridge the generational strata gap. However, social media presents contending concerns. A principal concern is inadvertently revealing sensitive or inflammatory information. Participating leaders are subject to a multitude of ethically charged dilemmas and live in an environment where their words and actions are published eternally in cyberspace. A highlighted and notorious example being the Abu Ghraib prisoner scandal in 2004. The inhuman treatment of Iraqi prisoners against Geneva Convention standards was instantaneously publicised. This served as a lightning rod moment and critically shunted US policy and credibility in Iraq. Notwithstanding, the internet and social media are here to stay. The recent COVID-19 pandemic has further proved this point.

COVID-19

In response to the global pandemic, the world shuttered institutions, locked down populations and organisations were forced to operate from home. This response placed increased reliance on collaborative technology and the internet. The sudden and catastrophic onset of the COVID-19 pandemic has sped up digital transformation and exposed digital gaps (United Nations, 2020). School assignments are handed out on Google Classroom and meetings are occurring on Microsoft Teams, both completely reliant on the virtual world. Additional restrictions including travel bans have challenged how military personnel train. Distributed virtual training became a natural solution (Colabatistto, 2020). The long-term impacts on readiness have yet to be ascertained. Virtual and tech-based solutions for education are proving as viable options. However, if the pandemic continues, there may be a need to address how technology can assist collective training. The pandemic continues to catalyse technological integration and presents leaders with rapid discontinuous change further stressing existing systems and processes.

A discussion of contemporary literature above has uncovered a complex set of driving forces placing pressure on organisational change. The sections above are by no means an exhaustive discussion and many more driving forces could be researched. In line with Lewin's force field analysis, this research must explore contemporary restraining forces. Recalling from Part One, a restraining force is something that is preventing an organisation from changing. Leaders must understand what factors are driving change and how their people react to it (Galvin, 2018). Herein lies the first restraining force discussed within the context of the military.
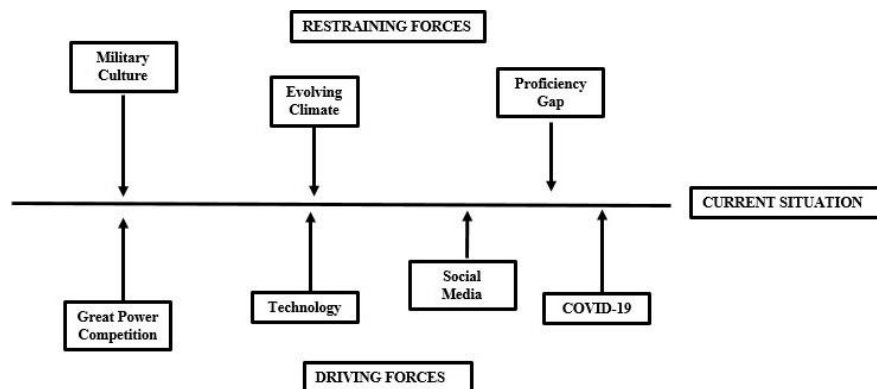

Figure 6. Lewin's Force Field Analysis Adapted with Current Restraining Forces

Restraining Force 1: Organisational Culture
Many military leaders would agree that their organisation is resistant to change based on their size, complexity and culture (Chinn & Dowdy, 2014). How is culture defined and what are its components? A review of the literature provides a multitude of definitions. Beach (2006) states that organisational culture prescribes activities to define the parameters that govern behaviour. One of the most renowned writers of organisational culture is Edgar Schein. Schein (2004) describes organisational culture as a pattern of basic assumptions that are learned through solving problems, which have worked well enough to be considered valid and are taught to new members as the way to perceive, think and feel.

Within this framework there are three levels of organisational culture; artefacts, espoused beliefs and values and underlying assumptions (Schein, 2004). It is important to note that only one of these levels is tangibly visible, lending credence to how difficult it is to change something that cannot be seen. The US Army defines culture as a set of shared attitudes, values, goals and practices that characterise the institution (Department of the Army, 2019). This definition although vague, attempts to encapsulate academic theoretical definitions. Interestingly, it also introduces the military as an institution. It may assist to see the military through the lens of an institution. One that comprises of people who are regulated by policies and procedures. Within the military there are clearly defined structures involving both rank and authority, often promoting a "top-down" approach. In the background, there also exists a strong historical heritage that remains influential.

In this context, Scott (2008) proposed a model that supplements Schein's framework and comprises of three pillars; regulative, normative and cultural-cognitive (Table 1). The regulative pillar involves setting rules and manipulating sanctions to influence future

behaviour (Scott, 2008). The normative pillar introduces an obligatory dimension by introducing values and norms to the institution and gives rise to establishing roles (Scott, 2008). The cultural-cognitive pillar comprises of shared the concepts that create the social reality which provides meaning to the members of the institution. (Scott, 2008). Scott (2008) astutely notes that the cultural-cognitive pillar can be manipulated and is under the control of the other two pillars. I would argue that senior military officials have a great deal of influence on the regulative pillar. They are the body that develops the policies and regulations that the entire service must follow. Today's senior military leaders have built careers around supporting and using legacy systems and processes (Blank, 2020). Unknowingly, leaders have become comfortable with the technology that made them successful. Blank (2020) describes this as institutional inertia and further supposes that the problem is just as much social as technical. It is this inertia that hinders the adoption of the next generation of technology (Blank, 2020). Understanding this concept sets the conditions for the next identified driving force.

Table 1. Scott (2008) Three Pillars of an Institution

	Regulative	Normative	Cultural-Cognitive
Basis of Compliance	Expedience	Social Obligation	Take-for-grantedness Shared Understanding
Basis of Order	Regulative Rules	Binding Expectations	Constitutive Schema
Mechanisms	Coercive	Normative	Mimetic
Logic	Instrumentality	Appropriateness	Orthodoxy
Indicators	Rules Laws Sanctions	Certification Accreditation	Common Beliefs Shared Logics of Action Isomorphism
Affect	Fear, Guilt, Innocence	Shame/Honour	Certainty/Confusion
Basis of Legitimacy	Legally Sanctioned	Morally Governed	Comprehensible Recognisable Culturally Supported

Restraining Force 2: Evolving Generational Climate
The military is unique from most institutions in that it is an organisation made up of many other large sub-organisations. It is important to acknowledge that while the culture of the military may remain generalised for the entire organisation, there will inevitably be the undercurrent of a multitude of climates established within each sub-organisation. Shambach (2004) notes that culture and climate are parallel concepts that may or may not reinforce one another. Climate reflects how people think and feel about their organisation (Department of the Army, 2019). In this context, climate can be seen as more short term in relation to culture. Underpinning internal challenges within the climate is the continual rotation of key leadership every 18 to 24 months. The climate depends on personalities and changes as personnel come and go (Department of the Army, 2019). Further compounding climate and cultural challenges in the military is the continuous induction of new soldiers. Today, these new soldiers represent

a generation of citizens who grew up immersed in technology. They were raised in a different environment from their leaders. They are familiar with relying on and leveraging technology, digital systems and high-tech processes. Generation Z born between 1996 and 2015, are unique since they were the first to be bombarded by technology since birth (O'Flaherty & Willard, 2019). They grew up in a world where anything they wanted was a click away. This has resulted in a cohort of young military personnel who prefer immediate responses (Moore, 2019). They can process massive amounts of information rapidly but lose interest quickly if they cannot understand the subject matter impact (Heitzman, 2018). They seek the "why" behind the task.

It is critical to acknowledge and identify generational differences between those leading and those being led. This difference can be understood through the configuration phenomenon. Fossum (1989) defines configuration as the phenomenon by which patterns and previous experience determine what we perceive and how we interpret it. For example, a student from the US refers to the storage space in the rear of their car as a "trunk." A similar student in Ireland would refer to this space as a "boot." When the same US student is abroad in Ireland, they are met with confusion when they use the word "trunk" as they know it. To adjust, they must learn to ensure the term "boot" is used in its new context to ensure understanding. Similar configurational learning exists between generations with the military culture and should be addressed. Learning plays a central role in all change processes (Stouten et. al, 2018).

Potential positive strengths within the military culture and climate do exist. Galvin (2018) points out that militaries are preparedness organisations whose daily activities work to ensure they are ready to perform their mission. In this preparation, they conduct reviews to identify readiness gaps and means to overcome them. Arnetz (2005) points out that organisational change is often driven by the need to improve productivity and efficiency. A mechanism to introspectively reflect on weaknesses could reinforce a culture willing to address shortfalls through change. This assumes said shortfalls correlate to a decrease in the ability to execute the mission.

Restraining Force 3: Filling the Technological Proficiency Gap
As our profession seeks the need for the integration of new technology, it seems to reason that we are also required to ensure that our personnel receive higher-level education and training commensurate to operate new, increasingly complex digital systems. This is especially true of organisational and strategic leaders within the military, who lack the benefit of growing up in an immersed digital age, bolstered by technology. The US military is beginning to conceptualise how to train non-cyber warriors to maintain mission assurance in an information saturated hyper-connected battle space (Mcardle, 2019). The United States Air Force (USAF) has identified the burgeoning need to recruit and retain its Airmen. Brown et. al (2020) discuss the need for multi-functional digital leaders capable of integrating new technology. Professional military education must be adapted to build a stronger technical foundation (Ryan, 2018). Concepts such as digital literacy and digital up- skilling will become commonplace. A new approach to education and training will be required to integrate a human-machine force (Ryan, 2018). Part of this balance will involve seeking training opportunities within the civilian sector and recruiting industry leaders who have the subject matter expertise. The Army recently launched its Quantum Leap program aimed to recode, reskill and up-skill 1,000 existing positions by 2023 (Suits, 2020). The US Space Force has developed a human capital plan. The service plans to bring people into the force laterally, from

the civilian workforce through direct assignment (Blank, 2020). Imagine the potential cultural and climate challenges posed by assigning civilians "off the street" to a military organisation. Furthermore, organisational and strategic leaders must shift a focused eye to not only retaining trained experts but also placing them in critical assignments that take full advantage of their skillset. This creates an entirely new talent management paradigm for a leader to balance within their organisations.

Change Management as a Tool

The next logical step after identifying competing change influences is deciding what to do about them. How an organisation and its leadership choose to address change could ultimately result in success or failure. Change management as a theory and practice presents a framework for organisations to navigate change. Jouany and Matric (2020) define change management as a systematic approach that includes dealing with the transition or transformation of organisational goals, core values, processes or technologies. By the virtue of their position, authority and ability to influence, military leaders can be considered as managers. Flamholtz and Randle (1998) define management as the process of influencing the behaviour of others to achieve organisational goals. Change and the forces that drive it are not organic concepts solely experienced by senior military leaders. Management can occur in any direction: downward, sideways, or even upward (Flamholtz & Randle, 1998). This is a vitally important concept to this paper as it enables the acknowledgement that change and the effectual management of such change, occur at multiple levels.

Change management as a transformational tool is designed to assist organisations in transition through their continual evolution. Jouany and Matric (2020) propose five common examples when change management is needed; implementation of new technology, mergers and acquisitions, change in leadership, change in culture and times of crisis. Of these examples, all but mergers have a direct correlation to driving forces identified through the context of Lewin's Force Field Analysis. The military finds itself in a perpetually evolving scenario change, or game without an end (Flamholtz & Randle, 1998). This leads us to consider the question "how is change management implemented within an organisation?"

Theoretical Frameworks

Kurt Lewin, whose force field analysis was discussed above, developed an accompanying change model. Lewin (1951) proposed that change occurs over three main phases; unfreezing, moving or changing and refreezing. Galvin (2018) describes Lewin's first step of unfreezing as a leader jolting their organisation out of complacency. His second phase of moving is where the organisation effectuates its desired change. The final phase is re-freezing, which is embedding the change into the organisational culture (Galvin, 2018). For change to last, organisations must dismantle the present, move to the future and put people and processes in place to ensure permanency (Lewin, 1951). Although widely considered as a mainstay, it is important to note that Lewin's model has been criticised. Anderson et. al (2008) note that Lewin's model was designed for planned change and may not be responsive to today's increased speed of change. While the model provides a basic framework for change, it seems to inadequately address the complexity confronting military leaders. This could be addressed by overlaying a more contemporary and descriptive model within Lewin's three stages.

A more contemporary and comprehensive change management model was developed by John Kotter. Kotter (1996) introduced his Eight-Step Model consisting of the following stages: 1) establishing a sense of urgency, 2) forming a powerful coalition, 3) creating a vision,

4) communicating the vision, 5) empowering others, 6) creating short term wins, 7) consolidating improvements and 8) institutionalising new approaches. Interestingly, Kotter's steps are similar to the US Army's mission command (MC) principles described earlier. In the first stage, people must see the urgent requirement to change (Kotter, 1996). This is important since people prefer their status quo and mistrust uncertainty (Anderson et. al, 2008). To counteract resistance to said change, managers must then form a powerful coalition to work with the most resistant (Kotter, 1996). To help direct and expedite the change, leaders must then create a vision and supportive strategy (Kotter, 1996). This plan can assist in preventing a return to the "business as usual" mentality (Anderson et. al, 2008). The vision is supported by the providing commander's intent, as described in the aforementioned MC principles. After the vision is outlined it is imperative to communicate the plan for its implementation. This step overlaps with the MC principle of creating a shared understanding. In the fifth step (Kotter, 1996) notes that leaders must empower people to act by removing barriers and encourage risk-taking. This step nests well within MC principles of accepting prudent risk and exercising disciplined initiative. The next step is supportive and seeks to positively reinforce the previous step. To validate the change, leaders must create and reward short-term wins that move the organisation toward the stated vision (Kotter, 1996). The seventh step requires leaders to build on the change momentum and continue to make nurturing adjustments as necessary (Kotter, 1996). The final step aims to make the change permanent. To make the change last, organisations should reinforce it by demonstrating the relationship between the new behaviour and success (Kotter, 1996). The final stage specifically addresses the need to consider the organisational culture, which this paper describes as the first restraining force. Kotter's model can be laid within Lewin's model and supported by MC principles to attain a more complete change management approach (Figure 7).

	Lewin's Change Theory		
	Unfreeze	Change	Freeze
Kotter's Eight Step Change Model	1) Create Urgency 2) Form Powerful Coalition 3) Create a Vision 4) Communicate the Vision	5) Empower People by Removing Barriers 6) Create Short-term Wins 7) Build on Change	8) Anchor Change in Organisational Culture
US Army Mission Command Principles (ADP 6-0)	• Provide Clear Commander's Intent • Create Shared Understanding	• Accept Prudent Risk • Exercise Disciplined Initiative	

Figure 7. Change Management Theory (adapted from Lewin (1951), Kotter (1996), & Department of the Army (2019))

Limitations to Change Management Theories

These recognisable models present linear, semi-rigid frameworks that may prove insufficient to address the complex change facing the military. Anderson et. al (2008) note that models are still relevant but problems arise with the speed and complexity of challenges facing today's organisational leaders. Kotter's model is ambiguous as to whether change is managed as a single event or as multiple spread throughout the entire organisation (Pollack & Pollack, 2015). To his credit, Kotter has since redefined his original model to include some flexibility. Kotter provides clarity by stating his steps can run concurrently and the coalition should include members from up, down, and across the organisation (LeStage, 2015). Yet, military change efforts face challenges that may go beyond what general-purpose process models can address. However, such models can be supplemented by leadership competencies and

attributes. A more tailored approach can be achieved by framing change through the fusing of theoretical models and supporting them with leadership techniques and competencies.

Adapting Theory for Military Change Management

Stouten et. al (2018) acknowledge that the ability to manage organisational change is likely to vary based on a manager's education and experience. Bruch and Sattleberger (2001) as cited in Stouten et. al (2018, p.775) contest that existing leaders require change-related skills training and developing. It is worth noting that US senior military leaders, typically Colonels in the brigade command queue, attend the Army War College. As a part of their education, they receive instruction covering change and its management. However, no such program formal instruction exists in the professional military education for junior leader levels. Ansari et. al (2017) point out that top and middle managers play different roles in change and need to be prepared. If change occurs at every level within the military and leaders at all levels have the influence to manage change, then it stands to reason every leader should receive change management training. Another complementary competency is a leader's capacity to understand and leverage organisational buy-in. Clawson (2015) provides a seven-level model that illustrates personal willingness to do something you ask. The seven levels, as depicted on the right side of Figure 8, can be thought of as a sliding energy scale used by leaders to manage buy-in (Clawson, 2015). In a step further, Clawson supposes three levels of leadership techniques that correlate to the seven levels of buy-in, as depicted on the left side of Figure 8.
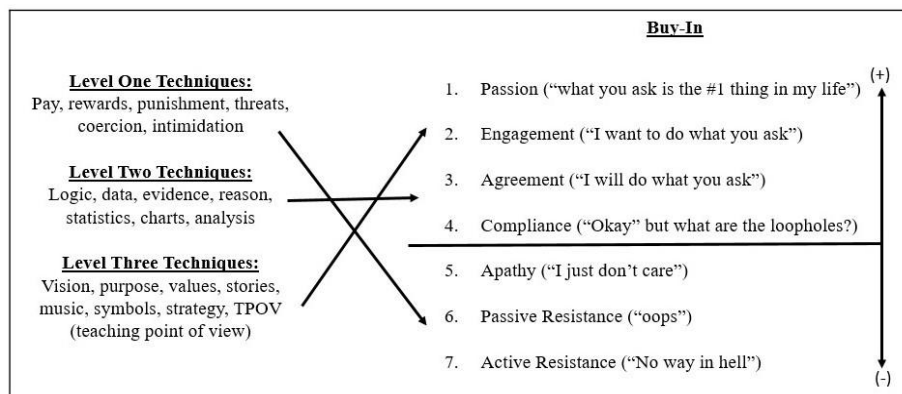

Figure 8. Three Levels of Leadership and Seven Levels of Buy in (adapted from Clawson (2015))

Summary

In summary, it is difficult to deny the premise that technological advancements are shaping the future. Rapid change and sophisticated technological systems make preparing for the future complex (Anderson et. al, 2008). Inevitably, every organisation across the globe will find advantages, competitive edges, and increased efficiencies with the integration of technology. However, with each new system or process comes challenges and susceptibility, the least of which is organisational change. Technology carries potential unexpected consequences for the organisational culture of the military (Dunlap 1999). At the forefront of this change is every leader in the organisation. How leaders within organisations embrace and lead through change can determine success or failure. In an ever-evolving geopolitical climate, this success or failure can mean the rise and fall of entire nations. Leaders must identify, embrace and address the need to manage subsequent organisational change. This is imperative to remain relevant and continue to provide credible defence capabilities. It would be a grievous mistake to assume leaders at all levels can continue with the status quo within

their organisations. The implementation and reliance on advanced technology will continue to change the way nations compete in the multi-dimensional operational environment.

Although not a complete solution, change management theories could provide military leadership with the framework and tools required to facilitate evolving organisations. Ultimately, the military is an institutional organisation comprised of and led by humans. The skillsets, attributes and willingness of leaders to facilitate rapid organisational cultural change could be the lynchpin to integrating change management within the military.

PART TWO. Methodology

The literature review conducted above highlighted and explored the requirement for military leaders to manage organisational change. The review utilised theoretical frameworks to identify and define forces that drive change within their organisation. Central to the research question, the review examined key critical forces that restrain or prevent an organisation from successfully changing. Finally, it introduced a contemporary change management theoretical framework, used by successful organisations while acknowledging their potential limitations for military application. This Part will identify the methodology and research design used to refine the discussions introduced in the literature review.

It is important to recognise that change is perceived by and affects people differently. The military as an organisation is comprised of a multitude of people. Each with their own varying personal experiences. Haselhuhn et. al (2012) describe the personal experience as an integral part of changing and determining behaviour. Likewise, a leader's ability to manage organisational change will vary from one individual to another. It is plausible to assume that no two leaders universally see events through the same lens, thusly creating differing realities. Leadership shares a similar characteristic. Although organisational regulations and doctrine define leadership, it remains a subjective experience in practice. This is equally applicable to managing change. Simply stated, it is a personalised concept. Furthermore, the complex change facing the military may be overwhelming for conventional theories to address. Taking all this into consideration, the research for this paper takes a general qualitative approach within an interpretive/constructivist philosophy.

Research Philosophy and Epistemology

This research is sited within an interpretive paradigm. This means that it adapts a subjective ontology and a relativist epistemology. Al-Saadi (2014) describes ontology as beliefs about the nature of reality and what exists. The ontology, or what a leader knows as reality, is likely to vary within the organisation. This supposes that there are multiple concurrent perceived realities spread throughout the varied sub-organisations within the overall military structure. Simply stated, my reality may not be shared by everyone in my organisation. Crotty (1998) as cited in (Al-Saadi, 2014 p.2) describes epistemology as a way of looking at the world that involves knowledge and legitimacy. It is the process humans use to know what reality is and how this has come to be. Experiences and reactions to change within the military affect everyone differently. Creswell (2009) supposes that individuals develop varied and subjective meanings through their experiences. Therefore, this research utilised an interpretive epistemology. The goal of an interpretive approach is to rely on the interviewee's view (Creswell, 2009). The interpreted experience of how leaders deal with change is paramount to understanding and exploring this research.

A positive or post-positive philosophy was considered but ultimately deemed inappropriate for this research. Creswell (2009) describes post-positivism as a scientific method relying on empirical evidence to identify causes. It would be extremely challenging to quantify reactions to managing change through numbers. This would negate understanding personal experience and further ignore the social-human interactional aspects between change and the relationship between leaders and their organisation. Additionally, if leadership and change can be influenced by previous experience within social constructs, then it is unlikely to be seen objectively. Phillips and Burbules (2000) as cited in Creswell (2009, p. 25) note that objectivity is an essential component of a postpositive approach. As such, this research requires an interpretive view that supports gathering qualitative subjective data.

My epistemology is shaped by 19 years of service in the U.S. Army as both an enlisted soldier and a commissioned officer. Having served nine years in the Army before becoming an officer means that I am older than most of my current peers. In some instances, I am the same age as those who lead me. I assimilated into the military before the evolution and reliance on technology. For these reasons, I am placed directly into the population which may be the most resistant to change. I have also served in both combat and combat service support occupational specialties. These varying roles have exposed me to a multitude of organisational climates and cultures. My career has been rife with change and I have constructed my habits through my social experience. I remain cognisant of my potential constructed biases with regards to change and "bracket" them aside from the target research audience. Having been fully immersed in the very topics discussed within this research makes an ethnographic approach problematic. Ethnography refers to the study of a cultural group in its natural setting (Creswell, 2009). To assist in removing my own bias from the research, I focused on participant's own experiences and used the data they provided for analysis. In further acknowledgment and attempt to bracket my personal experience, this research will address change within the military culture from a phenomenological approach.

Research Strategy

A phenomenological strategy uses participant's descriptions of their experiences to a phenomenon (Creswell, 2009). Wardynski (2019) describes technology as a universal phenomenon that has helped bring social change. This research posits that technology is a phenomenon driving change within the military. The phenomenological approach of this research aims to derive the participant's personal thoughts on experiences they have lived through. Since the methodology is relying on the descriptive experiences of people, it will be qualitative in nature. Qualitative research is used to understand individuals or a group's reaction to a human problem (Creswell, 2009). Change within an organisation is very much a human problem. It is personified through the personal interactions between leaders and their organisations as they are exposed to the driving forces of change. The focus of the research must remain agnostic of my own experience and aim to derive its findings from participants.

Semi-Structured Questionnaires

In support of achieving candid personalised descriptions, this research utilised semi-structured questionnaires consisting of Likert scale and open-ended questions. The Likert scale questions were designed to establish standardised data to facilitate comparisons between participants. The questions were inspired by the literature review comparing Kotter's Eight-Step Model to how each participant perceives these steps in relation to their own organisations. The open-ended questions were specifically designed for participants to speak their minds. Crotty (1998) as cited by (Creswell, 2009 p. 26) notes that qualitative researchers

use open-ended questions so participants can share their views. This is vitally important for the validity of this research and also assists in the aforementioned "bracketing" of my own preconceived experiences. The open-ended questions addressed a broad view on how change is perceived within the military cultural context and draw heavily on each participants' personal experience within their organisations. The questions were aimed at eliciting and identifying what they perceive as barriers to implementing change and most importantly, how they see the process managed. This two-prong approach facilitates analysing participants' subjective answers (open-ended questions) to their Liker scale responses. Effectively, this enabled the research to ask what should happen and compare it to what is actually happening. Face-to-face interviews were considered for this research but were deemed inappropriate. Given the subjective qualitative nature of the data required, a questionnaire could be completed in isolation, free from any potential bias from myself.

Participant Sample
A participant sample of 10 was selected from the overall population of middle to upper-level leadership. Targeted representation from the enlisted and officer population is used to produce a more balanced view. Their positions range from battalion staff through brigade and corps command. Importantly, their time in service ranges from nine to 22 years. This presumably ensures that the target audience has held a leadership position sometime in the spectrum of technologically induced organisational change. It further ensures that each respondent has served in more than one military organisation. For clarity purposes, the word organisation will be used henceforth to describe either a unit, company, battalion, brigade or division military formation. The validity of data received would be extremely narrow if interviewees only experienced one unit/organisational culture. Participants were anonymised using the codes A through J.

Ethical Considerations
The sample audience chosen for this research presents ethical considerations. The participants selected were individuals with whom I have previously served . Two participants had previously served in organisation where I held a leadership role. There exists the potential that their responses could be influenced by this previous relationship. Participants could be reluctant to provide a fully honest response for fear of reflecting poorly on my leadership abilities. However, I chose to deliberately select them because I value their opinion and have personally observed their organisational influence. I must also acknowledge that the questions asked during the interviews could unknowingly elicit emotional responses from the interviewees. There is a risk that the questions and discussion could force them to introspectively analyse or highlight shortcomings in their abilities. This could potentially influence their responses and produce explanations of what they "think" I want to hear or what they now know they "should" have done. To mitigate this, every effort will be made to provide a psychologically safe environment for candid judgment-free responses.

Analysis
Based on the data collected through questionnaires, this paper attempts to identify thematic and systematic commonalities and differences with the literature identified above. Central to the research question is the identification of responses relative to their history handling change and thoughts on successes and failures experienced. In analysing the data, the research identified four main themes with applicable supporting sub-themes listed below, which will be discussed in context in Part Three.

1) Military Change is Constant and Technology Plays a Vital Part
2) Leaders Influence Organisational Culture Which Impacts Change
   a. Non-permissive Leadership Attributes
3) The Military Relies on Leader's Abilities not a Formalised Process
   a. Permissive Leadership Attributes
4) Current Military Culture Inhibits Kotter's Eight-Step Model

Limitations

The primary limitation to this research was the ongoing Corona Virus 2019 (COVID-19) pandemic. Given the wide range of governmental restrictions in both the U.S. and Ireland, it would have been difficult to arrange for and conduct interviews. In mitigation, a questionnaire was chosen to give participants maximum flexibility and comfort with the research process. Further compounding this difficulty was balancing each participant's personal requirements outside of this research. Prior coordination and de-confliction were essential to ensure participants did not feel personally rushed and provided sound feedback. The use of questionnaires meant that I was unable to gauge the body language and overall demeanour of each participant. This limited the context of responses and introduced the potential for reliance on semantic coding. While the research did include leadership from both enlisted and commissioned officers it was focused generally on the middle to upper management positions. The research could have benefited greatly from a query of lower-level leaders such as company commanders and platoon leaders. Each of these positions represents leaders who have grown up fully immersed in technology, referred to as the "Generation Z".

Summary

The nature of the research required an approach that illuminates the human experience. Since change within an organisation is a phenomenon that can alter each person's reality, the research is best achieved through an interpretive/constructivist lens. This enabled the research to elicit qualitative data that is subjectively validated through the use of semi-structured questionnaires with a targeted audience. This paper took stock of existing literature discussing change management and compared it against data gained from participants. Part Three will outline and present an analysis of this comparison to glean how military leaders can manage change.

PART THREE: Research and Analysis

"The way the military is set up makes implementing technological changes a long and difficult process, harder than in the private sector." –Participant A

The literature review introduced the premise of organisational change and key components including classification and typologies. The paper then framed contemporary military organisational change, utilising Lewin's (1951) Force Field Analysis with a focus on identifying driving forces as pressures pushing for change and restraining forces as factors preventing change efforts. Figure 9 is reintroduced below for quick reference.
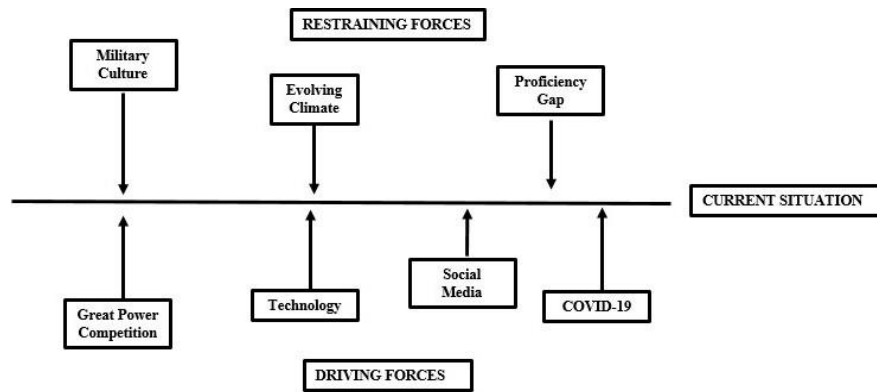
Figure 9. Lewin's Force Field Analysis Adapted with Current Forces

The review explored each of these forces through the lens of examples provided in contemporary literature. The existence of a distinctive military culture was pervasive in a majority of the literature as a significant barrier preventing any change within the organisation. The review then introduced change management as a transformational tool with which organisations could use to facilitate change. Finally, the paper introduced Kotter's (1996) Eight- Step Model as a theoretical framework as a renowned approach to managing organisational change. This model formed the core basis as the potential framework for military leaders to facilitate organisational change.

The purpose of this Part is to analyse the data collected to examine and determine if change management should be a topic of relevance for the military as they move forward through an era of increased technological advancement. Furthermore, it serves to analyse the viability of implementing change management theory, specifically Kotter's Eight-Step Model, within the contemporary military organisational culture. Inherent in this, is analysing data to confirm or deny the validity of driving and restraining forces as identified in above. The output of this data analysis is aimed at ultimately determining the current state of the organisation and identify how leaders can manage change in the evolving technological era.

Military Change Is Constant and Technology Plays a Relevant Part
One of the first questions asked of the participants was whether or not they agreed, disagreed or remained neutral to change within the military being a constant process. The question was designed to determine the initial importance of undertaking this research. An overwhelming majority of participants agreed that change within the military is constant, with only two providing neutral responses. At face value, the data suggests that military leaders perceive the notion that change is always something they are dealing with. It could be argued that with such a small sample pool, the data might not be indicative of the larger picture. To place this into context, participants were asked to list the number of different organisations they have served in, with the aim of identifying any individual who had limited cross organisational experience. A majority of the participants who agreed had served in at least six units. Interestingly, the neutral responses were given by participants who lacked cross organisational experience. This may suggest that the chance of seeing change as a constant correlates with their exposure to different organisations. It also serves to establish the credibility of the participants as having experienced change within the military.

Using the aforementioned questions as a participant relevancy baseline, participants were asked to identify, in their own words, what forces they perceived as drivers of change. It was critical that before this question, no mention had been made to any theory or topic that

was discussed in the literature review. The intent was to ask a wide-open question to illicit a subjective response void of any bias. The participant's responses were unexpectedly varied, from vague and general ideas to identifying key variables discussed in the literature. Participant B identified "*technology, social media, work climate, diversity, crisis, and senior leader changes.*" This was highly intriguing and most unexpected. Recalling from the literature review, I proposed great power competition, technology, social media, and COVID-19 as driving forces. While Participant B's response seems to support the suggestion of technology and social media as drivers, their perception of senior leader changes and work climate were identified above as restraining forces, personified through the constant rotation of leaders within the military organisational. Participant B's introduction of these factors as driving and not restraining forces was never considered, as the preponderance of literature identifies military culture as a roadblock to change.

Participant F responded that change comes from "*unforeseen crisis events or an anticipated need for change and is secondly driven by a leader.*" Participant H felt that change was the result of either planned or unplanned events with "*planned being directives from higher command and unplanned occurring from an accident or crisis*". Comparatively, these two responses are similar and lend implied credence to concepts introduced in Part One, specifically Gundel's Crisis Matrix (2005). The introduction of anticipated/planned and unplanned change concepts were also above through Allison (2013) as the two most basic forms of change.

Importantly for this research, participants were asked if any technological advancements had required a change within their organisation. All participants identified at least one personal example of technology-forcing change. Participant A referenced "*messaging on the go technology altering communication with higher headquarters instead of unreliable radios.*" Participant G described a similar technological shift in platforms "*migrating to file storage services to increase service integration*." But, perhaps the most impactful response was provided by Participant J, who stated,

> COVID-19 formalised teleworking technology to become the primary mode of conducting business and prompted the organisation to formally introduce criteria for what was mission- critical or non-essential. This made clear which meetings were actually necessary all along, versus what could be accomplished in an email.

Common threads emerged from the comparison of these responses. Most importantly the data suggests the premise for this research, that technology is changing the organisation. Participants also appear to tie the threads of leadership, significant driving events and technology together. This fusion, when analysed, lends support to the importance of this research. Participant E succinctly summarises this notion stating, "*In the military, technological advancement forces us to do things differently.*" Their responses seem to indicate the importance of leaders as an integral component in change management. Significantly, all but two of the participants mention leaders in their responses. This suggests that leadership may be a critical component to change, leading us to speculate about the roles leaders play. This will be discussed in more detail in the next section.

Leaders Influence Organisational Culture Which Impacts Change

"Old timers resist changes."- Participant E

25

Blank (2020) suggested leadership as one of the main determinants for establishing institutional inertia within an organisational culture. Part One introduced organisational climate, a part of the overall culture, as one of the significant contributing restraining forces preventing change. Assuming these two statements to be credible, the participants were asked if the culture of an organisation has a direct effect on implementing change. All participants agreed that the organisational culture impacts the implementation of change. This consensus tentatively suggests that culture is of significant importance. Knowing this only half solves the problem, we must then try to understand who steers said culture. Participants were also asked if they felt leadership was the most important component to establishing a culture. Again, all participants agreed. Through deductive reasoning, we can tentatively suggest that leaders are at the fulcrum of change management. Furthermore, participants were also asked if they felt a leader's personal ability to cope with and manage change had a direct impact on the organisations' ability to change. Once again, all participants agreed. Triangulation of these three data points suggests the vital importance a leader could have influencing organisational culture and change. The questionnaire then asked a series of questions to further explore the elements of leaders and organisational culture that they felt were important in facilitating change. The questions were a veiled approach to gauge current permissive and non-permissive attributes. The term permissive attribute is deliberately used to reflect a leaders' actions, attitudes and competencies that enable their organisation to accept and implement change. The converse, a non-permissive attribute, is used to describe a leader's actions, attitudes and competencies that prevent their organisation from facilitating change.

Non-permissive Leadership Attributes
All but one participant agreed that change within the organisation is met with resistance. This data was further supported by participants describing organisational factors. Participant B describes "*leaders who insist on running the organisation like it's 2004 versus the current unit.*" Participant G responded with similar experiences, stating "*a mind-set of this is how it's always been done.*" These two examples infer that senior leaders are struggling to reconcile with the current time and trends. Interestingly enough, the format of the questionnaire was digital. The intent was to have participants simply type their data into the pre-formatted sheet. Two of the participants chose to print, handwrite and scan their forms back. When asked why, Participant D stated "*they did not want to ruin the format and went old school.*" Their action and reasoning seem to confirm the assertions of Participants B and G above.

Furthermore, participants were asked if they felt there was a generational difference between senior leaders and new soldiers. Every single participant agreed that a difference exists. This data and its cross analysis strongly suggest that there is a generational disconnect within the organisation. It also appears to support Part One, with its description of Generation Z and the potential considerations for senior leaders. Participant B succinctly makes this argument, "*simple example of generational differences, the rapid shift to digital signatures and routing of documents normalised over 10 years ago and is still evolving for some leaders.*" This statement signals a potentially problematic rift within the organisation. This is particularly relevant when considered alongside the implications that leadership is a critical component of organisational culture and change. A common undertone to participants' responses across the board, seems to point at the potential fallibility of leaders.

Data from this research may indicate that leaders are under-prepared to manage change driven by technological advancement. This could be hugely problematic, considering theme one and the perception that change is an ever occurring event within the military. Only two participants agreed that the military had provided them with formalised training to deal with change. Of the two, only Participant F had received any change management training as part of their professional military education (PME). The other, Participant H, had been "*sent by their unit to attend civilian training*," outside the purview of the military. Interestingly, Participant F, the only one to receive formal military-provided training, also indicated that they were "neutral" on whether the training was adequate. All of these responses, when considered together seem to infer that the military rarely trains leaders in change management and when they do, it may not be sufficient. Recalling that Ansari et. al, (2017) state that middle managers need to be prepared for change, my data suggests that the reality is far from ideal, leaving middle leaders to rely solely on their own capabilities. Potentially compounding this chasm is the fact that all participants agreed that their ability to manage change was learned "on the job." This is extremely problematic as experiences may vary, lending the organisation to perpetuate potentially non-permissive behaviours. If change is constantly occurring, as the data suggests, then the question is, why does the military not emphasise change management training? The military conceivably continues to evolve and change. The data above leads the research to question how this is accomplished. We will explore this further in the next section.

The Military Relies on Leader's Abilities not a Formalised Process

Participants unanimously agreed that the use of a system or process is required to successfully effect change. However, just over half responded that their organisations use some semblance of structured steps to implement change. This implies the identification of a perceived gap between what participants think should be the process and what their organisations actually do. Further, not a single participant disagreed that change within their organisations often happens as an "ad hoc" effort forced from the top down. This finding may appear to be contradictory with the statement that some structure is utilised, or, quite revealing. This dichotomy, when compared, suggests that the entire organisation may not be invested in an efficient process to manage change. This may not be all that surprising in light of the inferences made in theme two above. It may be unfair to assume a leader, who has never received formalised change management training, would be able to employ a theoretical model such as Kotter's Eight Step. This would naively assume that their "on the job" training was received in an organisation that practiced a formalised process. Through the lens of my literature review, I would have expected this type of scenario to be unlikely. However, a few participants identified leaders who embodied supportive personal attributes and isolated techniques that helped change efforts to succeed.

Permissive Leadership Attributes

Not all military organisations fail to implement change. Participant G recalled a successful change that was facilitated by leaders' "*willingness to give stakeholders the opportunity to provide feedback*." Participant D noted that "*interviews with stakeholders*," were essential to successful change. Similar tones were echoed by Participant G who mentioned the "*ability to receive stakeholder feedback and input*," and Participant B stating "*open communication and two-way feedback*." When taken together, these responses centre on the people involved and communication between those affecting and being affected by the change. This data is highly important as it directly supports some of Kotter's model. Specifically, communicating the vision (step four) and removing barriers (step five).

Although there appears to be a supportive link between the attributes discussed above and some of Kotter's steps, the data suggests a lack of a unified attempt to bring them together under one process. The participants' responses indicate that change could be successful if you are fortunate enough to be in an organisation with a leader possessing such permissive qualities. This is not the case in every organisation, as only a fraction of the participants had examples of successful change efforts. Furthermore, only one participant describes the combining of multiple permissive acts in a single instance. The research simply did not present an example where steps were taken in a combined effort as is prescribed in Kotter's model.

In sum, the findings indicate that organisations may not be the most permissive to accommodate change management. To explore this possibility, I asked a series of questions that correlated directly with organisational change management steps developed by Kotter (1996). Terms were re-worded to prevent influence should any participant recognise Kotter's steps. Each of these questions had a correlating question aimed at establishing if their organisation was supportive of that step.

Current Military Culture Inhibits Kotter's Eight-Step Model
A brief recap of Kotter's Model is necessary to contextualise this theme. Kotter (1996) proposed the following steps to implementing organisational change:
1. Create a Sense of Urgency.
2. Form a Powerful Coalition.
3. Create a Vision.
4. Communicate the Vision.
5. Empower People by Removing Barriers
6. Create Short-Term Wins
7. Build on Change
8. Anchor Change in Organisational Culture

All participants agreed that identifying and discussing the need for immediate change is important. This question assessed the value they placed on Kotter's first step, creating a sense of urgency. In a separate section, participants were asked if their leadership established a sense of urgency when a change was necessary. All but one participant agreed that their leaders did this. The cross-analysis of these data points suggests that current organisations recognise and implement Kotter's first step. Although highly encouraging, this revelation is not conclusive and may be misleading. Thought needs to be given as to the driving purpose of urgency as a mechanism. Are current leaders culturally this way because their jobs often involve life or death situations that are inherently urgent? Perhaps the top-down nature of the military hierarchy places direct pressure on subordinate leaders to act urgently within time constraints.

A majority of participants agreed that assembling a group with enough power/influence to lead a change effort was important. This question assessed the value they placed on Kotter's second step, forming a powerful coalition. However, the majority of participants disagreed when asked if their leadership asks for input from subordinates before major decisions. If their leaders were asking for subordinate input then they would be considering them for inclusion as a part of the influencing coalition. The data implies a lack of willingness for leaders to include potential stakeholders as part of the change team. This data

is also highly intriguing when considered against attributes discussed already, where multiple participants mentioned stakeholder to leader interaction as a success. This analysis further highlights the potential random nature of organisations with permissive change environments. The cross-analysis of this data suggests that permissive organisational cultures' are the isolated exceptions, driven by a select few special leaders. This may imply that most organisations fall short on change integration.

Only two of the participants agreed that communication within their organisation was free-flowing. However, when asked, all fully agreed that communication of a vision or strategy was very important. These two data points highlight a potentially troublesome condition within the current organisational culture. The participants identified Kotter's fourth step as a priority. The most commonly shared response to key leadership attributes required for change was communication and interpersonal skills. Yet the data suggests that most leaders lack this attribute and the conditions on the ground seem to lack its facilitation. Even more telling, only half of the participants report having leaders who create a clear shared vision in the first place. Taking these three points into consideration infers that there exists a very limited number of organisations that first, have a vision and secondly, possess conditions enabling the communication of said vision. This data would seem to contradict findings where participants described communication as an example of when leaders successfully integrated change. Although this data was unexpected, it could potentially further confirm the implications of the transient nature of both permissive organisational cultures and leadership attributes. This is potentially another instance of participants experiencing an isolated exception of a special leader in a permissive organisation.

Summary

This Part presented the key findings from the research and compared and contrasted participants' responses. It drew on the literature review to confirm, deny and expound on the proposed state of the organisation. This comparative cross-analysis situated the content of the literature review against the reality as it is seen on the ground through the experiences of participants. Several key themes emerged from this research: first, military change remains a constant and technology plays a relevant part. An overwhelming number of participants acknowledge that change is always present in their organisations. Every single participant further described at least one example of how technology had driven change within their organisation. The data implies confirmation of the relevancy of the very topics explored in this paper. Second, leaders influence the organisational culture which impacts change. Participants' all agreed that culture has a direct impact on an organisations' ability to change. Further, they unanimously agree that leadership is the most important contributor to developing said organisational culture. The data uncovered certain perceived leadership attributes and actions which formed a catalyst for non-permissive organisational cultures. Third, the military relies on leaders' abilities vice a formalised process. All participants agree that the use of a system or process is required to successfully effect change. Yet, most assert that their organisations approach change in an "ad hoc" manner void of the identified requirement for a process. The only successful change examples explained were facilitated by isolated leaders, with seemingly uncommon permissive attributes. This juxtaposition of data suggests that the military could benefit from implementing a model such as Kotter's'. Finally, the current military culture inhibits Kotter's Eight-Step Model. By and large, the participants described their organisational culture as a significant barrier to implementing change, especially through the lens of Kotter's steps. While some organisations exhibited permissive environments, they were few and far between. Generally, this was facilitated by an

exceptional leader, who even at their best, failed to connect all eight of Kotter's proposed steps.

PART FOUR: Key Findings, Implications and Recommendations.

This study attempted to examine how military leaders could manage organisational change with a specific focus on technology as a contributory driving force. The literature review began with a discussion of the First World War and the introduction of the tank, as a historically relevant example of technology forcing an organisation to change. This prominent historical example, when combined with current governmental emphasis, bolstered this researches relevance. The review introduced organisational change, intended to construct a basic framework for identifying typologies of various forms of change. The review utilised Kurt Lewin's (1951) Force Field Analysis to identify the dichotomy between forces causing change (driving forces) and forces preventing change (restraining forces). The study proposed and discussed four main driving forces; Great Power Competition, Technology, Social Media and COVID-19. The review further identified and discussed three main restraining forces; Military Culture, Evolving Climate and Proficiency Gap. The review concluded by exploring the theoretical framework and potential military application of John Kotter's (1996) Eight-Step Change Management Model. For the primary research, a pool of 10 military leaders were given a questionnaire as a phenomenological strategy to describe their experiences and analyse them against concepts introduced in the literature review. This qualitative approach situated participant's lived experiences against contemporary literature to confirm, deny or further explain how organisational change can be managed.

Key Findings

Overall, this research suggests that the military should remain concerned about addressing organisational change, especially given the pervasive nature of technological advancements. However, current efforts on the ground appear unsupportive of the profound emphasis that senior leader policy and strategy currently place on the importance of evolving organisations to embrace technological change. Senior military and political leaders continue to inundate policy and strategic guidance with an emphasis on integrating new technology and change into the organisation. These policies are not suggestions, they are directive statements in a "survive and adapt or perish scenario". Yet what these strategies espouse, may not be functionally acted upon and translated at the operational and tactical organisational levels. Is this because the military organisational culture is not ready and receptive to properly employ a change management model such as Kotter's Eight Step or is the model simply unfit for purpose within the military context? This research concludes that Kotter's model is perceived by current leaders as fit, though their organisations are not culturally receptive to progressively implementing the process.

The participants' responses overwhelmingly agreed that a system or process is required to successfully integrate organisational change. They further unanimously agreed that each and all of Kotter's Eight Steps are extremely important to this process. Underpinning these assertions is the collected data suggesting that the military does not properly train leaders on how to manage change, and when they do, it is perceived as ineffective. The military appears to be relying on an isolated pallet of talent instead of institutionally developed knowledge. These data points, when connected and synthesised, strongly suggest there is a niche possibility to institute Kotter's steps into a present void in military intuitional primary military education (PME) curriculums.

Recommendations

The findings discussed within this research validate technology's ability to drive organisational change and corroborate current military culture, and its supportive components, as a main restraining force. From the analysis of data and the research conducted, two main recommendations emerged. First, the addition of change management principles and processes into the primary military education (PME) from the institutional level. Second, a concerted emphasis of importance on talent management to place the right leaders in the right organisations.

Introduce Change Management in Primary Military Education (PME): Build Knowledge

A conclusion drawn from this research is the suggestion that leaders are underprepared to facilitate a change management process. The notion that mid-level leaders are relying on "on-the-job" experience to deal with change is problematic. The top-down nature of the military is seemingly alienating a potentially powerful section of the command structure by not empowering them with applicable knowledge and awareness. The data collected suggests the need to further empower junior and mid-level leaders with the knowledge to identify and facilitate change in a bottom-up model. This model does not have to be in direct conflict with the historical top down nature of the military hierarchy. An empowered and informed junior leadership capability could, in theory and practice, bolster support efforts in a grass roots effort. Simply stating terms and topics within doctrine may not be enough. Cycles of innovation and change will undoubtedly continue to force organisations to react. Junior and mid-level leaders must be armed with the knowledge of how to understand and sense change, not simply react to it. Change management modules should be included in all levels of PME, including schools for Officers and Non-Commissioned Officers (NCO).

Talent Management: Bolster Knowledge with Talent

The data gathered and analysed during this research suggests that the military is relying more on leaders' talents rather than a standardised approach to achieving wider levels of knowledge with regards to change management. By no means is this necessarily a bad dependency. It may provide the military an opportunity to build change management momentum. With this in mind, supported by the data analysed, this research recommends including key permissive leadership attributes in talent management decisions. The following key attributes were identified during this research as favourable to establishing an organisational culture receptive towards change implementation; effective communicator, seeks inclusion, creates a vision, receptive to new ideas and provides feedback. Furthermore, an aligned talent management process should focus on assigning leaders with these qualities into high friction/high importance organisations to build the foundation of a strong coalition in line with Kotter's proposed process. These recommendations are not intended to compete with the aforementioned recommendations. They should work to supplement each other, and provide secondary change capabilities in the absence of formally trained change managers.

Implications

This research began as an undertaking to identify how leaders can effectively manage the organisational change that current technological advancements are requiring. Through an exploration of contemporary literature and participants' experiential data, I have identified a perceived gap between the need for change management and current organisations ability to facilitate actual change. The findings of this research may have profound, far-reaching implications for Defence Force leaders at all levels. The very military organisation described in

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Part One is built on leadership, and as such, the doctrine discussed focuses heavily on leaders. The research findings of this paper impart a potential warning to leaders; our formations are dealing with change at a reduced capacity. The data suggests that the problem is part process and part personal. It further implies that leadership development must continue to evolve, just as the organisation changes with technology.

An eventual reality, for every single service member, is that someday they will be forced to take the uniform off. When this day comes, they will re-join the greater civilian population, taking with them years of experience and habits. No matter what they choose to do, once they leave the service, it would be naïve to assume dealing with change would not still apply. Change is occurring simultaneously around the world to all different organisations, civilian and military alike. I see it as a leader's responsibility to provide soldiers with as many possible tools to be successful in life, both in and out of uniform. This research can influence anyone's ability to understand and deal with change in any environment.

Although this research focused on examining technology as a driver for change, there are many other internal and external forces exerting pressure. Given the suggestive conclusions drawn from this research, the principles of change that apply to technology might also apply to other driving forces exerting themselves on the organisation. Therefore, we might assume that organisational culture may present similar barriers to these other forces for change not introduced specifically by this research. The literature discussed in Part One and the analysis from Part Three may assist organisational leaders to understand today's complex operational environment. This may be a subject to confirm or deny through the exploration of additional research.

Limitations

Admittedly, the research undertaken focused on the subjective experience of mid-level managerial leadership who seeming bridge the gap between senior leaders and a burgeoning new cohort of soldiers. The limited scope of this research tells the story of one of many possible viewpoints. In mitigation, the participants' represented both the Officer and Non-Commissioned Officer (NCO) corps to strike a balance of experience and access to varied military education levels. Additionally, the current COVID-19 restrictions and stressors to personal and professional lives may have negatively influenced the depth and extensiveness of participants' qualitative data.

Potential Areas for Future Research

The scope of this research was unable to explore the potentially massive topic of organisational change within the military. Specifically, the research focused on mid-level managers within the hierarchy. Further research could be conducted to include a focus on younger cohorts of soldiers, referred to as Generation Z. In a similar constraint, this research used Kotter's Eight Step model as the theoretical pillar. To confirm or deny the applicability of his model, further research and questionnaires could be conducted using other models. A comparison between this study and McKinsey's 7S' Model could yield insight into change management theory and its applicability to the military. Finally, further research could be conducted utilising driving forces that are unrelated to technology. While this paper supposed technology as the catalyst for change, it is fair to assume there are many more forces present. Such an exploration may further highlight the value of integrating formalised change management training and awareness into the military.

Please note that the views expressed in this article are those of the author alone and they should not be taken to represent the views of the US Army, the Irish Command and Staff School or any other group or organisation.

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