



**CANADIAN GLOBAL AFFAIRS INSTITUTE**  
**INSTITUT CANADIEN DES AFFAIRES MONDIALES**

# **Funding Defence for the Age of Accelerations**

by Ross Fetterly  
April 2019

# POLICY PERSPECTIVE

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## FUNDING DEFENCE FOR THE AGE OF ACCELERATIONS

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*“Military plans and programs involve substantial periods of time and are concerned with operational capabilities which are expressed in terms of forces, weapons, facilities and states of readiness. Defence budgets relate to a single year and are expressed in terms of money. There is, therefore, an important difference in time scale and language.”<sup>1</sup>*

**A**t a time when even large, high-tech Silicon Valley corporations that operate as market disruptors are challenged to keep up with the pace of change, national Western governments need to ensure that defence funding is responsive to persistent, dramatic and non-linear shifts in the international strategic environment. The United States is experiencing a “deepening crisis of credibility in global affairs”,<sup>2</sup> largely resulting from an America-first posture, rather than a multilateral approach with traditional allies. Some nations now view the U.S. as “undermining the international order”,<sup>3</sup> and reliance on the U.S. as the leading democratic nation is less certain. Indeed, periods of great economic change “driven chiefly by economic and technological developments, which then impact on social structures, political systems, military power, and the position of individual states”,<sup>4</sup> create a dynamic that shifts power, influence and trade among nations. Further, nations that can “develop, produce, and deploy technology the most effectively”<sup>5</sup> can gain a comparative advantage in the current security environment, where the rate of technological change is accelerating. However, with adversaries advancing their military technology in increasingly shorter cycles, market dominance by Western defence firms has only fleeting or transitory advantage. The revolution in military technology has been a constant topic for analysts, but the changing military and defence department skill sets required in the future security environment are equally important, with the cyber-realm and space being two prominent examples.

Internal political cohesion in many Western nations is fraying, and countries such as Russia are employing “complex strategic coercion”<sup>6</sup> externally, as well as prioritizing the capability to transition rapidly from peace to war.<sup>7</sup> Nations need a national defence establishment that is responsive to the environment. Further, China’s increasing authoritarianism amplifies the challenge and impact of threats from non-democratic or illiberal states. Former U.S. Defense secretary Ash Carter said in 2016 that such authoritarianism “could end up erecting a Great Wall of self-isolation”.<sup>8</sup> This evolving situation, together with other regional security challenges in the

<sup>1</sup> Ad Hoc Committee on Defence Policy, “Budgeting and Programming as Tools of Defence Management,” Department of National Defence, 1963.

<sup>2</sup> Hal Brands, Eric S. Edelman, and Thomas G. Mahnken, “Credibility Matters: Strengthening American Deterrence in an Age of Geopolitical Turmoil,” Centre for Strategic and Budgetary Assessment, 2018.  
[https://csbaonline.org/uploads/documents/Credibility\\_Paper\\_FINAL\\_format.pdf](https://csbaonline.org/uploads/documents/Credibility_Paper_FINAL_format.pdf)

<sup>3</sup> Paul Dibb, “Why We Need a Radically New Defence Policy,” *The Strategist*, Australian National Defence University Strategic & Defence Studies Centre, 2018, 3-7. <https://www.aspistrategist.org.au/why-we-need-a-radically-new-defence-policy/>

<sup>4</sup> Paul Kennedy, *The Rise and Fall of Great Powers: Economic Change and Military Conflict from 1500 to 2000*, (New York: Random House, 1987), 439.

<sup>5</sup> Francis Fukuyama, *The End of History and the Last Man*, (New York: Free Press, 2006), 73.

<sup>6</sup> Julian Lindley-French, “Complex Strategic Coercion and Russian Military Modernization,” Canadian Global Affairs Institute, 2019.  
[https://www.cgai.ca/complex\\_strategic\\_coercion\\_and\\_russian\\_military\\_modernization](https://www.cgai.ca/complex_strategic_coercion_and_russian_military_modernization)

<sup>7</sup> Diego A. Ruiz Palmer, “Theatre Operations, High Commands and Large-Scale Exercises in Soviet and Russian Military Practice: Insights and Implications,” NATO Defence College, 2018. <http://www.ndc.nato.int/news/news.php?icode=1172>

<sup>8</sup> Wendell Minnick, “Carter Warns of Chinese ‘Great Wall of Self-Isolation’,” *Defense News*, 2016.  
<https://www.defensenews.com/2016/06/04/carter-warns-of-chinese-great-wall-of-self-isolation/>



Middle East, Africa and South America, reflects the broad global security risk, both near-term and beyond. Complexity in the international security environment derives from the myriad of issues prevalent in 2019, with no single source predominating.

There is evidently a growing sense of unease among Western governments, due to the broadening forms of security threats that are developing. If several of these threats are realized, it could impact negatively on these nations and their economies. For example, hybrid warfare can be viewed as “an attack against NATO’s strategy-making”.<sup>9</sup> Unfortunately, one of the largest problems facing Western defence establishments is the challenge in effectively planning over the medium to long term. Yet, “despite ferociously complex planning processes”,<sup>10</sup> optimal institutional resource management processes remain elusive. Time has compressed. The decision cycle in defence continues to evolve, yet the trend is increasingly shorter time frames. However, major capital equipment projects in many Western countries now take longer to execute. This dichotomy has the long-term potential to negatively affect the defence establishment’s responsiveness. The significant cost and long time it takes to make substantive changes in defence are less understood. Likewise, the contradicting approaches Liberal and Conservative governments have taken in defence over recent decades have resulted in a certain level of strategic incoherence.

In Canada, defence is simultaneously experiencing both a supply push and a demand pull. The Canadian government signalled in the 2017 Defence Policy that it was willing to increase defence funding in the fiscal framework, yet sustaining funding increases will be a challenge.<sup>11</sup> At the same time, rapidly developing technology in a number of sectors is driving advances in weapon system capabilities. Technology in defence needs to be treated differently from the customary procurement process in the federal government, due to the extraordinary level of technology in leading-edge weapon systems. Currently, by the time the government issues Requests for Proposals, the technology can already be obsolete. In addition, changing military doctrines and capabilities in response to shifts in the international security environment are increasing the need for responsive defence funding. The one commonality in this environment is the increasing speed of change, which is why this age has been called an “age of accelerations”.<sup>12</sup> The focus of this paper will be on the international security environment and the way in which it affects how the federal government needs to fund defence in the coming years.

While maintaining a focus on Canada, this paper will begin by describing the international strategic environment under which Western governments and defence planners are operating, and then examine how defence establishments are managing uncertainty. The paper concludes by describing approaches that the Canadian government can take to manage defence funding levels in an age of accelerations.

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<sup>9</sup> Uwe Hartmann, “The Evolution of the Hybrid Threat, and Resilience as a Countermeasure,” NATO Defence College, 2017. <http://www.css.ethz.ch/en/services/digital-library/articles/article.html/3eadb4fb-09de-4b79-93b1-af1ee4117a0d/pdf>

<sup>10</sup> Mark Thompson, “Improving Defence Management,” Australian Strategic Policy Institute, 2007, 3.

<sup>11</sup> David Perry, “Following the Funding in *Strong, Secure, Engaged*,” Canadian Global Affairs Institute, 2018. [https://www.cgai.ca/following\\_the\\_funding\\_in\\_strong\\_secure\\_engaged](https://www.cgai.ca/following_the_funding_in_strong_secure_engaged)

<sup>12</sup> Ralph D. Thiele, “Chasing the Centre of Gravity in the Age of Accelerations,” Institute for Strategic, Political, Security and Economic Consultancy, 2018. [https://www.ispsw.com/wp-content/uploads/2018/05/550\\_Thiele.pdf](https://www.ispsw.com/wp-content/uploads/2018/05/550_Thiele.pdf)



## The International Strategic Environment Facing Western Nations

Defence funding drives programs, together with the military and departmental public servants who operationalize initiatives. In an age of accelerations, hegemonic power is devolving into regional and ideological centres, ensuring that the “resilience in terms of the ability to cope, adapt and quickly recover from stress and shocks caused by a disruption, disaster, violence or conflict”<sup>13</sup> is becoming increasingly important. Indeed, the effect of black swans, “events that are rare, have an extreme impact and retrospective (though not prospective) predictability”,<sup>14</sup> are growing in an increasingly connected world. Further, pronounced global disorder is negatively impacting the multinational institutions developed to better co-ordinate global affairs following the Second World War, such as the General Agreement on Tariffs and Trade (GATT), the World Trade Organization (WTO), the United Nations, the G7 and the G20. All of these institutions provide an essential interface and forums for discussion among nations, based on an acknowledged set of rules and regulations. Complicating adjustment to a changing international discourse is that globalization has sapped the influence of religion and culture, which consequently has been “reinvented in more severe, monochromatic, and ideological forms by way of the communications revolution”.<sup>15</sup> The international security environment Canada faces is highlighted in Figure 1.

In an increasingly inter-connected world where different crises occur simultaneously, their influence on each other can magnify the impacts. Most noteworthy is the migration crisis,<sup>16</sup> which is impeding the European Union’s reformation of asylum regulations and deferring action on other substantial internal regional issues. With strategic competition among major powers now a primary concern for American national security,<sup>17</sup> global defence expenditure will likely continue rising. This has implications for Canada and the resources needed to fund the Department of National Defence (DND).

Southeast Asia is “likely to be a focus of Chinese power and coercion”<sup>18</sup> in the coming years with elements of increased dominance and influence in the region. The Chinese government will also intervene more in business activity across all elements of operations.<sup>19</sup> Further, geographic regions such as the Arctic, which previously were largely uncontested areas, could now be used by nations such as Russia to threaten North American security.<sup>20</sup> In the cyber-realm, a “misalignment of cross-border policies”,<sup>21</sup> including standards, preparedness, regulations and the

<sup>13</sup> Ibid.

<sup>14</sup> Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable*, (New York: Random House, 2010), xxii.

<sup>15</sup> Robert D. Kaplan, “The Return of Marco Polo’s World,” Center for a New American Security, 2017, 5. <http://stories.cnas.org/wp-content/uploads/2017/05/CNASSTORY-MarcoPolo-Final.pdf>

<sup>16</sup> Heather A. Conley and Donatienne Ruy, “Europe’s Migration Maelstrom and Its Political Tides,” Centre for Strategic and International Studies, 2018. [https://csis-prod.s3.amazonaws.com/s3fs-public/publication/181018\\_Conley\\_CrossingBorders\\_FINAL\\_v2.pdf](https://csis-prod.s3.amazonaws.com/s3fs-public/publication/181018_Conley_CrossingBorders_FINAL_v2.pdf)

<sup>17</sup> U.S. Department of Defense, “Summary of the 2018 National Defense Strategy of the United States of America,” 2018.

<https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>

<sup>18</sup> Paul Dibb, Richard Brabin-Smith, and Brendan Sargeant, “Why We Need a Radically New Defence Policy,” in *Why Australia Needs a Radically New Defence Policy*, Strategic and Defence Studies Centre, 2018, 3-7.

[http://sdsc.bellschool.anu.edu.au/sites/default/files/publications/attachments/2018-11/cog\\_44\\_web.pdf](http://sdsc.bellschool.anu.edu.au/sites/default/files/publications/attachments/2018-11/cog_44_web.pdf)

<sup>19</sup> Gordon Orr, “What Can We Expect in China in 2019?” McKinsey, 2018, 7.

<https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/China/What%20can%20we%20expect%20in%20China%20in%202019/What-can-we-expect-in-China-in-2019.ashx>

<sup>20</sup> David Curtis Wright, “The Dragon and Great Power Rivalry at the Top of the World: China’s Hawkish, Revisionist Voices within Mainstream Discourse on Arctic Affairs,” Canadian Global Affairs Institute, 2018.

<https://www.cgai.ca/the-dragon-and-great-power-rivalry-at-the-top-of-the-world>

<sup>21</sup> Jason Healey, Patricia Mosser, Katheryn Rosen, Adriana Tache, “The Future of Financial Stability and Cyber Risk,” The Brookings Institution, 2018, 12.

[https://www.brookings.edu/wp-content/uploads/2018/10/Healey-et-al\\_Financial-Stability-and-Cyber-Risk.pdf](https://www.brookings.edu/wp-content/uploads/2018/10/Healey-et-al_Financial-Stability-and-Cyber-Risk.pdf)



ability to respond to cyber-events, all contribute to unique threats to Western defence institutions. With the Western security architecture weakened by “renewed geographical competition, technological developments, and states violating or bypassing internal law, or walking away from previous commitments”,<sup>22</sup> changes to national defence funding reference levels need to be responsive to changes in the international security environment. However, effecting change in large and complex national defence institutions is like changing the navigational course of a supertanker – it’s slow and requires diverse considerations and significant effort. In a defence environment “which requires simplicity, greater agility and timely delivery”,<sup>23</sup> defence organizations need to be well-suited to respond to anticipated challenges, and able to deliver the output required. Governance has been an institutional priority at National Defence Headquarters for almost a decade, yet continued attention and updating of timely decision-making processes in response to the changing environment are necessary.

### Figure 1 – The International Security Environment Canada Faces in 2019

- ✓ Uncertainty and non-linear shifts in the international environment are driving nations to re-evaluate their current defence postures;
- ✓ The high-turbulence threat environment compels defence organizations to adapt their defence strategy more frequently to realign their security postures;
- ✓ Unilateral moves by an increasingly “America First” United States government are eroding its credibility among longstanding allies;
- ✓ The resilience and ability for defence organizations to respond to challenges, from natural disasters to combat operations, is becoming an escalating national imperative;
- ✓ Expanding national defence budgets globally translates into greater financial burdens on nations at a time of diverse economic challenges;
- ✓ Rapid advances in defence technology place pressure on governments to upgrade current weapon systems and purchase next-generation combat systems;
- ✓ Much of the deployed operations of Western military forces are in ungoverned spaces;
- ✓ Continued volatility in the international security environment is part of a long-term trend in an increasingly multi-polar world; and
- ✓ Despite escalating use of technology in defence organizations, it will remain a people-driven business, requiring increased skills and knowledge, as well as specialized expertise.

There are no easy solutions to the problem of how to provide the army, navy, air force and special forces with “incentives to face up to hard choices and get the most capability for the money they spend”.<sup>24</sup> Indeed, in defence management, “the underlying measure of effectiveness – efficiency – is essentially incompatible with military”<sup>25</sup> organizations. The efficiency issue has been a recurring theme in defence literature. This is due to the expensive nature of military

<sup>22</sup> Corentin Brustlein, “The Erosion of Strategic Stability and the Future of Arms Control in Europe,” Proliferation Papers No. 60, French Institute of International Relations, 2018, 5. [https://www.ifri.org/sites/default/files/atoms/files/brustlein\\_erosion\\_strategic\\_stability\\_2018\\_3.pdf](https://www.ifri.org/sites/default/files/atoms/files/brustlein_erosion_strategic_stability_2018_3.pdf)

<sup>23</sup> Australia Department of Defence, “First Principles Review: Creating One Defence,” 2015, 13. <http://www.defence.gov.au/publications/reviews/firstprinciples/Docs/FirstPrinciplesReview.pdf>

<sup>24</sup> Alain C. Enthoven and K. Wayne Smith, “How Much is Enough? Shaping the Defense Program 1961-1969,” RAND Institute, 1971, 327.

<sup>25</sup> G.E. Sharpe and Allan D. English, “Principles for Change in the Post-Cold War Command and Control of the Canadian Forces,” Canadian Forces Leadership Institute, 2002, xii.



organizations, employment of large numbers of personnel, use of an extraordinary level of technology, the considerable number of different weapon systems used, and the wide range of diverse organizations required to prepare for and execute tasks. Historically, efficiency savings have been modest, which is due in part to structural barriers within defence, including the role of the military, the lack of incentives to change and parliamentary reluctance to make certain changes within defence. This is partly because of the nature of military operations which “propels commanders and managers to translate efficiencies into better performance rather than savings”.<sup>26</sup> Better performance drives increased effectiveness of military outputs but it does not produce substantial monetary savings.

The Canadian Armed Forces (CAF) has not been a garrison force for some time, but a military organization used extensively and continuously for deployed operations. Many national defence institutions face similar problems in adjusting to an evolving international security environment. Results will come to the extent that the Canadian government, together with DND and the CAF, solves the current problems, from recruiting through to procuring and delivering new weapon systems into the military, while they also adapt tactics, techniques and procedures to operate in a changing environment. Yet, funding drives activities and initiatives. Therefore, defence funding and the level of ambition that future Canadian governments will want to assume provide the resource base to achieve desired outcomes.

Although national defence establishments are subject to abrupt, frequent and erratic change, “their unanticipated onset forces the entire defense enterprise to reorient and restructure institutions, employ capabilities in unexpected ways, and confront challenges that are fundamentally different than those routinely considered in defense calculations.”<sup>27</sup> Indeed, in this age of accelerations, change is a dominant factor, where the “array of military, political, societal, economic and ecological threats does not constitute a static agenda for national security”.<sup>28</sup> The relative stability generated by the end of the Cold War is eroding and becoming an increasingly distant memory. National governments can no longer expect defence policies to have a lengthy shelf life in an environment where defence and foreign policies will constantly be under review as the international security environment evolves erratically. Indeed, while the rapid and at times disruptive change in global security issues is readily apparent in defence procurement and in operational demands, the pace of change in federal institutions can vary between plodding and glacial. This divergence highlights the conundrum which Canada and its allies face in 2019. Further, DND “operates within a wider Government of Canada business framework that places many obligations upon it”.<sup>29</sup>

Despite the security challenges Canada has faced “certain invariants of Canadian strategy”<sup>30</sup> that have provided a degree of flexibility and choice in determining national defence policies. The first is geography, with Canada and the U.S. sharing an undefended border that is the world’s longest (8,891 kilometres, including Alaska), linking the security of both countries together against external threats. Second is economic strength; yet, as the nation with the largest economy, the

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<sup>26</sup> Robert F. Hale, “Promoting Efficiency in the Department of Defense: Keep Trying, But Be Realistic,” Center for Strategic and Budgetary Assessments, 2002, 14. [www.csbaonline.org/wp-content/uploads/2011/03/2002.01.25-DoD-Efficiency.pdf](http://www.csbaonline.org/wp-content/uploads/2011/03/2002.01.25-DoD-Efficiency.pdf)

<sup>27</sup> Nathan Frier, “Known Unknowns: Unconventional ‘Strategic Shocks’ in Defense Strategy Development,” Strategic Study Institute, 2008, vii. <https://ssi.armywarcollege.edu/pdffiles/PUB890.pdf>

<sup>28</sup> Barry Buzan, *People, States and Fear*, 2<sup>nd</sup> edition, (Boulder, CO: Lynne Rienner Publishers, 1991), 133.

<sup>29</sup> Charles Davies, “Defence Transformation and Renewal: Teeth, Tails and Other Myths,” Canadian Defence Association Institute, 2014, 5. <https://cdainstitute.ca/wp-content/uploads/2012/06/DaviesMay2014.pdf>

<sup>30</sup> R.J. Sutherland, “Canada’s Long-Term Strategic Situation,” *International Journal* (17:3:199-223), 1962, 201.



U.S. dominates Canada, which has the 10<sup>th</sup> largest<sup>31</sup> national economy. Third are natural alliances and alignments, with the U.S. the most important from both an economic and cultural perspective. While Western Europe, and in particular the United Kingdom and France for historical reasons are part of this perspective, the large number of immigrants arriving annually in Canada is also increasingly orienting the country toward other regions. A key challenge in 2019 and beyond is managing the uncertainty in the international strategic environment.

## Managing Uncertainty in Defence

The extent to which the national defence establishment can respond to unexpected change will contribute significantly to successful outcomes. The DND's 2011 *Report on Transformation* framed this challenge in the following manner:

Throughout the history of both the Canadian Forces and the Department of National Defence, we have demonstrated both the capacity and willingness to change. Too often, however, our historical review has shown that the process of change has been reactive, halting, and even grudging. Even as our predecessors acknowledged the advantages of agility, flexibility, and being proactive, the natural human and organizational tendency has been to move cautiously, to preserve the status quo, and to seek to maintain the equilibrium until circumstances either forced change on us, or to stall until the agents of change have moved on.<sup>32</sup>

Although organizations are designed, built and managed for a myriad of different purposes, each fulfils a specific goal. National defence departments and military organizations have traditionally required the character and attributes suited for an ever-changing international security environment. Globalization, the declining influence of traditional political parties and the shift away from a unipolar world to emerging spheres of influence mean Western defence establishments must adapt to shorter time frames, including modifying their strategies to change more frequently than in the past. The increasing rate of change is driving both private- and public-sector organizations to reduce costs, improve product quality, drive process improvements, find organizational efficiencies, increase productivity and adopt best practices, all the while shifting resources internally in response to changing demands. Thus, while the approach to leadership in the military and the values held may remain fairly stable, resource allocations, the types of jobs they will be required to perform and the weapon systems they use may change considerably. In this dynamic environment, resources need timely allocation from less important to emerging areas. Government's strategic approach needs to "enable tactical flexibility while sustaining a vision of desired outcomes".<sup>33</sup> National Defence Headquarters supports this through an extensive use of forecasting methodologies, including scenario development and alternative futures analysis, providing a certain level of "bounded uncertainty".<sup>34</sup>

Change is becoming one of the few constant variables in an age dominated by disruptions – climate change, increasing availability of artificial intelligence, rapidly changing job markets, aging populations, a vastly greater number of annual economic migrants globally and inter-

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<sup>31</sup> Rob Smith, "The World's Biggest Economies in 2018," *World Economic Forum*, 2018. <https://www.weforum.org/agenda/2018/04/the-worlds-biggest-economies-in-2018/> <https://www.investopedia.com/insights/worlds-top-economies/>

<sup>32</sup> Department of National Defence, "Report on Transformation 2011," Section 1.3 Transforming.

<sup>33</sup> Gregory F. Treverton and Robert Hutchings, "Rebuilding Strategic Thinking," Center for Strategic and International Studies, 2018, 23.

<sup>34</sup> Brian W. Greene, "Rethinking Strategic Surprise: Defence Planning Under 'Bounded Uncertainty'," Department of National Defence, 2010. <https://apps.dtic.mil/dtic/tr/fulltext/u2/a533235.pdf>



connected financial markets subject to volatility. Specifically, in an increasingly claustrophobic and fiercely contested world, territory is still important and “every crisis interacts with every other as never before.”<sup>35</sup> This atmosphere requires collaboration at a time when long-standing relationships are fraying. It is also complicated by the reality that while the “pace of change continues to accelerate, the fundamental transformation underway in the global economy has only just started.”<sup>36</sup> While national defence institutions traditionally dealt with uncertainty by designing particular components to concentrate on uncertainty, the financial function generally operated with greater certainty than some elements in defence and in a similar manner to other government departments. While “uncertainty appears as the fundamental problem for complex organizations, and coping with uncertainty, as the essence of the administrative process,”<sup>37</sup> the DND is becoming more distinct as a federal government department, due to the shifting demands that the changing security environment is placing on it. The situation today in defence is similar to that faced by large automobile manufacturers. Several years ago, they began to shift from largely incremental annual improvements in their cars to an environment where rapidly changing technology is forcing those manufacturers to completely re-examine how they design and build vehicles. Within this same dynamic of fast-moving technological advancement, defence is distinguished by an ongoing shift in the external environment that can be gradual in nature, interspersed by dramatic events with the potential for significant change. The 2017 Defence Policy generated a similar reflection and began re-orienting the defence establishment for the security environment that Canadians will face in the coming years. Defence is different from civilian sectors in that uncertainty is “characterized by the fact that the probability distribution of the uncontrollable random even is unknown”.<sup>38</sup> This highlights the need to ensure that the defence department is adequately funded as global security challenges evolve in non-linear and at times unexpected ways.

## Managing Defence Funding in the Age of Accelerations

*“The defence decision making process is a complex process with elements of rationality interspersed with competition for scarce resources and negotiations that result in solutions that while not always based on logic, can be accepted by the major stakeholders.”<sup>39</sup>*

In an era where hybrid warfare has come to the forefront and an increasingly multi-polar world brings an array of security challenges, the longstanding approach to defence budgets from the post-Cold War period needs to be examined. The quotation above is from a Canadian Forces Leadership Institute book that looked at command-and-control principles for the immediate post-Cold War era. While the mechanisms to fund defence in Canada have evolved over the past two decades, the importance of funding defence to the level required in a world that is different, regional and ideological, with several economic groups all competing for attention, cannot be over-emphasized. Indeed, in an environment where the “marriage of rapid technological progress with strategic dynamism and hegemonic change could prove especially potent”,<sup>40</sup> substantial Western advances in technologies will require focused investments and a responsive funding

<sup>35</sup> Kaplan, 6. <http://stories.cnas.org/wp-content/uploads/2017/05/CNASSTORY-MarcoPolo-Final.pdf>

<sup>36</sup> Lowell L. Bryan, “Just-in-Time Strategy for a Turbulent World,” in *McKinsey Special Edition: Risk and Resilience*, McKinsey & Company, 2002, 18. <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/just-in-time-strategy-for-a-turbulent-world>

<sup>37</sup> James D. Thompson, *Organizations in Action*, (New York: McGraw-Hill, 1967), 159.

<sup>38</sup> Gene H. Fisher, *Cost Considerations in Systems Analysis*, (New York: Elsevier, 1971).

<sup>39</sup> Sharpe and English, xii. [http://madgic.library.carleton.ca/deposit/govt/ca\\_fed/DND\\_Principlesforchange\\_2002.pdf](http://madgic.library.carleton.ca/deposit/govt/ca_fed/DND_Principlesforchange_2002.pdf)

<sup>40</sup> Michael O’Hanlon, “Forecasting Change in Military Technology, 2020-2040,” The Brookings Institution, 2018, 27. [https://www.brookings.edu/wp-content/uploads/2018/09/FP\\_20181218\\_defense\\_advances\\_pt2.pdf](https://www.brookings.edu/wp-content/uploads/2018/09/FP_20181218_defense_advances_pt2.pdf)



mechanism. This geopolitical dynamic is partly driving Western governments to increase defence funding.

The American chairman of the Joint Chiefs of Staff was concerned about defence funding in 2017, stating that without “sustained, sufficient, and predictable funding, I assess that within 5 years we will lose our ability to project power; the basis of how we defend the homeland, advance U.S. interests, and meet our alliance commitments.”<sup>41</sup> Allied nations should also be concerned about the availability of budgetary resources to meet the challenges of a chaotic conflict environment where past approaches, doctrine and strategies can be ineffective, notwithstanding subsequent incremental funding allocated to the American defence budget. In this ambiguous and transforming environment, the annual budgetary cycle, together with a business planning cycle of four to five years, is progressively becoming misaligned from resource demands. Having a timely response in resource allocations is important because Canada needs to be able to scale up operational activities and capabilities quickly.

### Figure 2 – Necessary Defence Budget Characteristics

- ✓ Defence budgets need to be capable of adapting to change at the same speed as technology in the international security environment is advancing;
- ✓ Leadership, governance and strategy are essential components in aligning the defence institution toward a budget and execution process in an uncertain environment;
- ✓ Defence expenditure is not linear. It has multiple stakeholders and perspectives – some with divergent goals;
- ✓ Pluralist methodologies are required – there are no quick fixes and one size does not fit all;
- ✓ Defence funding needs to simultaneously balance funding for near-term and long-term programs and strategies to conduct the necessary missions of today and to be prepared for future conflicts;
- ✓ An increased ability to contract quickly for short- to medium-term expertise and specialized work;
- ✓ A bipartisan approach to defence priorities and funding.

New and emerging technologies are primed to reform numerous sectors of the economy in the coming years, including defence. Having the requisite resources available to make the shift from strategy to execution is essential. This requires the leadership in National Defence Headquarters to continue investing in the fairly robust governance framework that has been built up and reformed over this decade. Information is becoming increasingly important – requiring the DND to build on establishment of the new business analytics team within the Office of the Chief Data Organization by rapidly scaling up its growing defence program analytics capability.

At present, defence funding consists of both baseline and incremental funding. During the Cold War, the relative stability of the strategic environment – where much of the focus was training for

<sup>41</sup> Joseph F. Dunford Jr., “Posture Statement of 19th Chairman of the Joint Chiefs of Staff before the 115th Congress House Armed Services Budget Hearing, June 12, 2017,” United States Congress, 3.  
<http://docs.house.gov/meetings/AS/AS00/20170612/106090/HHRG-115-AS00-Wstate-DunfordJ-20170612.pdf>



a NATO-Warsaw Pact confrontation – provided a robust setting to forecast baseline costs. While there was some change over this period, such as NATO’s shift to a flexible response, the fundamentals remained largely the same. The end of the Cold War unleashed regional and country-specific security issues that had been held in check from the U.S. and Soviet Union. UN peacekeeping missions increased dramatically, and Canada became a leading peacekeeping nation. The impact on the Canadian defence establishment was that employment shifted from a relatively focused training model for traditional combat to a series of deployed missions where the Canadian military were peacekeepers and at times peacemakers. In contrast to the previous baseline funding model, that environment required significant in-year incremental funding.

The current environment again reflects a distinct paradigm shift. The longstanding model of buying a major equipment fleet, operating it for two decades and then going into a midlife refit/upgrade that extends the fleet out for further decades has largely become obsolete. Due to the rate of technological obsolescence as this decade comes to a close, new equipment with latest-generation technology needs to be refreshed and updated regularly, particularly software. The new archetype is epitomized by the J-model Hercules aircraft fleet purchased for the CAF. This fleet replaced the E-model Hercules which entered service in Canada in 1964, with the first J-model aircraft arriving in service in 2010. The E-models generally followed the traditional in-service upgrade and management cycle. In contrast, the J-model fleet follows a block upgrade process that regularly updates both software and hardware capabilities. Lockheed Martin fleet block upgrades reflect feedback from a multi-national C-130J users’ group that includes Canada. In this environment, one size or method does not fit all. In refits of naval vessels, while certain hardware or major ship components may need to be upgraded or replaced, technology-based refits may need to occur more frequently. In some cases, the entire technology suite may need to be replaced.

The above discussion highlights the fundamental institutional challenge of operating in a security environment with a rapid technological pace. Specifically, the pace of advancing technology and the DND’s ability to keep up with it are becoming significant challenges. The issue will be a particularly important cost driver in the coming years, perhaps coercing the government to both update major fleets more frequently and to move forward planned purchases of next-generation weapon systems. The capacity to move procurement and other defence programs or initiatives is largely driven by people.<sup>42</sup> With the increasing number of military personnel and public servants in defence retiring due to demographics, this drop in institutional knowledge and experience can have negative consequences – particularly as defence is programmed for more money and capital equipment projects. Hence, the ability and financial resources to rapidly hire specialized expertise will be needed to counterbalance the loss of skilled and experienced professionals.

With the United States administration contending that the world is involved in an increasingly different arms race, “one that involves technology, rather than conventional weaponry, but poses just as much danger to America’s national security”,<sup>43</sup> leading nations in technology will gain substantial military and economic advantages. Funding mechanisms need to evolve to closely align with the shifting demands on resources in this fluid environment. For defence procurement, this could follow a process that begins with the pilot of a capability, and then if successful, incremental funding would be requested from Treasury Board to begin the project. Instead of a set series of project gates, the department could return to Treasury Board on a number of

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<sup>42</sup> Ross Fetterly, “The Importance of People in Defence,” Canadian Global Affairs Institute, 2018.

[https://www.cgai.ca/the\\_importance\\_of\\_people\\_in\\_defence](https://www.cgai.ca/the_importance_of_people_in_defence)

<sup>43</sup> David E. Sanger, Julian E. Barnes, Raymond Zhong, and Marc Santora, “America Pushes Allies to Fight Huawei in New Arms Race With China,” *The New York Times*, Jan. 26, 2019. <https://www.nytimes.com/2019/01/26/us/politics/huawei-china-us-5g-technology.html>



occasions for incremental funding as the project evolves and adjusts to changes in technology, threat and shifting essential capabilities. This requires more timely, dynamic and responsive federal resource decision-making and allocation processes.

The transition to the decade-long campaign in Afghanistan was funded through a series of multi-year operations, which provided the advantage of enabling financial planning over a period of fiscal years. Incremental or supplemental funding, while helpful and necessary to finance deployed operations, is much less predictable. Assuming that the international strategic environment will likely keep the current overarching construct for at least the medium term, defence in Canada needs to shift its financial management focus to the longer term. Specifically, the focus should be to increase the baseline funding to incorporate a higher activity rate over the longer term, in order to reduce some of the annual in-year incremental funding, such as through the supplementary estimates funding process. A higher stable (baseline) funding level allows for more effective and stable financial planning.

A distinct characteristic of the annual defence budget in Canada, the U.S. and a number of other countries is “that it does not allocate large amounts of funding for conducting military operations”.<sup>44</sup> Certainly, Western governments face a broad range of challenges in financing defence departments in the current international security environment. This includes maintaining the defence budget baseline funding level in the face of other national priorities, including resourcing funding for deployed operations, such as with the UN, NATO or as part of coalitions of the willing. New resource challenges need to include climate change. In Canada’s case, these environmental changes are opening up the Arctic Ocean to Russian and Chinese navies to a previously unimaginable extent.

History in many Western nations has shown costs are vastly underestimated for new or changed activities that are undertaken, resulting in funding pressures in other areas of the defence budget. Similarly, in-year or multi-year supplemental appropriations funding for specific deployed operations do not always have the same level of institutional checks and balances as established departmental baseline funding. Likewise, there is a need for greater differentiation in defence procurement projects. For example, the Unforecasted Operational Requirement (UOR) process was used effectively during the Afghanistan campaign to rapidly deliver new capability to Canadian troops on operations, such as the RG-31 mine-resistant patrol vehicle fleet that was purchased in a very short period of time. This rapid acquisition process has direct applicability for technology-based projects. Defence departments can become accustomed to supplemental budget appropriations, and when they are reduced due to activity changes, they can be difficult to implement. Finally, increased activity levels, deployed operations and war fighting can drive significantly higher costs in the future, when damaged or destroyed equipment needs to be replaced or refurbished. Prior estimates of a conflict’s duration and intensity can be grossly understated or overstated, depending on the circumstances. Given a broad range of potential outcomes in any probable conflict, it is not surprising that costs could vary significantly from initial assumptions and estimates. Refocusing on the core business of national defence establishments by transferring activities or programs that are not core to the missions<sup>45</sup> would allow defence leadership to focus on their essential roles.

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<sup>44</sup> Aaron L. Martin, “Paying for War: Funding U.S. Military Operations Since 2001,” Dissertation, RAND, 2011, 1. [https://www.rand.org/content/dam/rand/pubs/rgs\\_dissertations/2011/RAND\\_RGSD283.pdf](https://www.rand.org/content/dam/rand/pubs/rgs_dissertations/2011/RAND_RGSD283.pdf)

<sup>45</sup> Todd Harrison, “Evaluating Options for a Sustainable Defense,” Center for Strategic and Budgetary Assessments, 2010. <https://csbaonline.org/uploads/documents/2010.07.20-Evaluating-Options-For-a-Sustainable-Defense.pdf>



As the international strategic environment evolves, the DND may need to re-assess what it will cost to operate the CAF. This needs to include a system that puts the Canadian military back into equilibrium, in a manner that balances current demands against a sustainable pace of operations. The department must also ensure that planning is underway to sufficiently prepare for a spectrum of different forecasted outcomes.

Central agencies would likely resist incorporating deployed operations funding into the budget baseline, as it provides money for activities that may not fully materialize in a given fiscal year. However, it could be managed by having a review every four or five years to update the baseline, minimizing the need to seek in-year funding through the supplemental estimates process. This would provide a check on the baseline funding level and allow for the advantage of stable funding. During reductions of short-term operations, a portion of the baseline could be explicitly directed to reset military equipment and stocks. Contingency operations funding provides defence departments “with a means to meet operational requirements in support of contingency operations without disrupting approved program execution or force readiness”.<sup>46</sup>

Defence funding is centred on the trinity of personnel, operations and maintenance, and capital (equipment). While attention is often focused on people and equipment, maintenance and repair of the equipment in service are becoming increasingly important in a security environment that can change dramatically in a short time. With an increased focus on operational readiness, managing maintenance, repairs and overhauls of large, expensive, high-tech fleets can be a challenging institutional endeavour. This is important because in defence, the “weapons environment critically influences choice of policy”.<sup>47</sup> Specifically, the defence budget needs to be capable of adapting to change at the same speed that the international security environment is changing.

The 2017 Defence Policy illustrates how an unstable international strategic environment is driving basic change in the way defence organizations are funded and operate. In a 2019 defence management environment that is flatter, more rapid in execution of advanced capabilities, and with greater interconnectedness, defence organizations can be challenged to respond quickly in dynamic and unpredictable circumstances. Planning in defence is infused with the temperament “to pursue strategic interests or meet policy demands with top-down, off-the-shelf plug-ins – standardized but adapted capacities – rather than seek deeply innovative answers based on entrepreneurial and decentralized initiatives”.<sup>48</sup> Defence needs to be in a state of continuous transformation – representing circumstances that are driving resource management to a new normal environment.

In the adversarial nature of democracies, competing visions of defence policy across political parties can be expected. Yet, notwithstanding the strategic invariants of geography, economic strength and natural alliances and alignments, defence procurement has been a perennial problem. Major capital acquisitions generally take place over several election cycles. The history of defence procurement in Canada is replete with examples of politics impacting replacement of military equipment, of which the Sea King helicopter is perhaps the most prominent.<sup>49</sup> The defence of a nation should be above the politics of the day. A bipartisan agreement in defence

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<sup>46</sup> U.S. Secretary of Defense, “Fiscal Year (FY) 2019 President’s Budget. Justification for Component Contingency Operations the Overseas Contingency Operation Transfer Fund,” Department of Defense, 2018.

[https://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2019/FY2019\\_OCOTF\\_Justification\\_Book\\_FINAL.pdf](https://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2019/FY2019_OCOTF_Justification_Book_FINAL.pdf)

<sup>47</sup> Charles J. Hitch and Roland N. McKean, “The Economics of Defense in the Nuclear Age,” RAND, 1960, 7.

<https://www.rand.org/pubs/reports/R346.html>

<sup>48</sup> Daniel N. Nelson, “Beyond Defence Planning,” *Defence Studies* 1:3: 2001, 25-36, 27

<sup>49</sup> Aaron Plamondon, *The Politics of Procurement: Military Acquisition in Canada and the Sea King Helicopter*, (Vancouver: UBC Press, 2010).



could form the basis for planning and funding Canadian defence capabilities, and would support long-term stability for the CAF and the country's defence industry. Australia recently completed an "Inquiry into the Benefits and Risks of a Bipartisan Australian Defence Agreement".<sup>50</sup> Denmark and Sweden have developed processes to negotiate bipartisan defence arrangements and the U.S. has frequently displayed bipartisanship between Democrats and Republicans. In 2017, the Senate Standing Committee on National Security and Defence recommended that the political parties build a cross-party consensus on military issues and that "defending Canada should be an issue that is above partisan politics"<sup>51</sup> with citizens desiring greater co-operation among political parties. The discussion in this paper has focused largely on the Canadian defence establishment. Yet for fundamental change to occur, the three national political parties need to examine the nature and environment of the political discourse in Canada.<sup>52</sup> Consideration should be given in the upcoming election period to establishing a bipartisan committee in the House of Commons on defence, with the scope and parameters of such an agreement decided after the election.

## Conclusion

Publication of the 2017 Canadian Defence Policy initiated a number of significant changes and illustrated how an unstable, precarious and shifting international strategic environment drives basic change in the way defence organizations think, are funded and operate. The shift to an increasingly multi-polar world is accelerating the need for Western governments to ensure their defence establishments continually evolve their processes, procedures and structures to remain current. Keeping defence funding at a level appropriate to the international security environment is key. Yet, in the current uncertain and high-turbulence threat security environment, the levels of resources required – people, equipment and their requirements, together with a dynamic operational tempo – are likely to constantly surprise us with diverse challenges. While defence funding has increased or decreased in the past at times without a new policy, a mechanism that can respond to repeated security environment shifts without a formal policy needs to be identified through updates. Further, the standard defence focus on projects and programs needs to evolve to thinking about capabilities, supported by a more agile resourcing process. For example, defence procurement should be more flexible to enable institutional leaders to start with one perceived outcome in an operational environment that is rapidly changing while technological demands are increasing – both factors that are driving increased costs. In this regard, the DND is faced with the constant watermark of fiscal realities. While the current defence policy aspires to change that dynamic, future funding from the federal fiscal framework is not guaranteed. Defence budgets are like ammunition: money must be targeted to be used effectively. This re-emphasizes the need for greater bipartisanship among federal political parties in Canada.

Management processes are becoming the centre of gravity for defence organizations. How they plan and execute their resource strategy will be central to institutional success. Indeed, the management of defence resources in an age of accelerations relies not on the nation or alliance that takes action first, but on the country that can scale up capabilities and personnel the fastest

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<sup>50</sup> Parliament of Australia, "Inquiry into the Benefits and Risks of a Bipartisan Australian Defence Agreement, as a Basis of Planning for, and Funding of, Australian Defence Capability," 2018.

[https://www.aph.gov.au/Parliamentary\\_Business/Committees/Joint/Foreign\\_Affairs\\_Defence\\_and\\_Trade/BipartisanDefAgreement](https://www.aph.gov.au/Parliamentary_Business/Committees/Joint/Foreign_Affairs_Defence_and_Trade/BipartisanDefAgreement)

<sup>51</sup> Senate Standing Committee on National Security and Defence, "Military Underfunded: The Walk Must Match the Talk," 2017, vi.

[https://sencanada.ca/content/sen/committee/421/SECD/reports/DEFENCE\\_DPR\\_FINAL\\_e.pdf](https://sencanada.ca/content/sen/committee/421/SECD/reports/DEFENCE_DPR_FINAL_e.pdf)

<sup>52</sup> Alan Stephenson, "People, Partisanship and Political Games: The Defence File," Canadian Global Affairs Institute, 2018.

[https://www.cgai.ca/people\\_partisanship\\_and\\_political\\_games\\_the\\_defence\\_file](https://www.cgai.ca/people_partisanship_and_political_games_the_defence_file)



and execute operations. Rapidly advancing technology and global geopolitical balances are shifting away from the relative stability of the post-Cold War era. They are causing tectonic shifts in linkages and structures that have defined the international strategic environment since the dissolution of the Soviet Union in late 1991. Governments can expect continuing volatility in national security as part of a global long-term trend. Indeed, in the current environment, “parts interact in new and unique ways which defy preset definitions.”<sup>53</sup> Consequently, national defence institutions need to direct their energy towards adapting core functions to closely align with changing defence and security challenges. Foremost among these is responsiveness in funding. Defence budgets must be able to adapt to change at the same speed at which the international security environment is changing. Indeed, ensuring that both resources and capabilities are available is the linkage between strategy and following through on decisions by execution.

While the Canadian national defence institution has traditionally been ambitious and aspirational, leaders in the military and defence department need to position themselves at the leading edge of disruptive trends to prepare the CAF for future threats. Given that the risks are much more systematic and interconnected globally than in the past and are characterized by troubling unpredictability, management and governance of those resources will be a key institutional necessity. Canada’s entrance into a much more difficult era became apparent earlier in this decade with Russian incursions into Georgia, with cyber-warfare, and with influence campaigns and ongoing operations in Syria and eastern Ukraine.

Earlier in this decade, the national defence establishment placed considerable emphasis on the institution and its reform, and developed a much more robust governance regime. In particular, where the defence reform team focused on institutional processes and procedures, the centre of gravity now needs to shift toward implementation of a future focus. In defence, short-term flexibility is minimal, while long-term flexibility is unlimited. The problem is to determine how to bridge the gap between short- and long-term demands. Funding levels must adapt to address shifts in the international environment. The challenge is that the DND and CAF are much better executors than innovators. In 2019, Canadians realize that we are in a global environment characterized by inherently more volatility emanating from both geopolitics and technology.

The federal election expected in October will result in both the Liberal government and opposition parties increasingly focusing on the campaign at the expense of other government business. Consequently, the federal bureaucracy has no appetite to bring forward significant programs or reforms at the ministerial level in either defence procurement or governance issues. In 2017, the Senate Standing Committee on National Security and Defence recommended a cross-party consensus on military issues. The upcoming election period is an opportunity for the federal parties to indicate their support for such a committee after the election to discuss ways in which the parties can co-operate on defence issues.

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<sup>53</sup> Chris Fussell and C.W. Goodyear, *One Mission: How Leaders Build a Team of Team*, (New York: Penguin, 2017), 34.

## ► About the Author

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**Ross Fetterly** retired in 2017 from the Canadian Forces after a 34-year career as the Royal Canadian Air Force's director of air comptrollership and business management. He previously served as the military personnel command comptroller, and in other senior positions with the Department of National Defence Assistant Deputy Minister (Finance).

Retired Col. Fetterly completed a tour in February 2009 as the chief CJ8 at the NATO base headquarters at Kandahar airfield, Afghanistan, where he was responsible for finance, contracting and procurement. While deployed he wrote a paper entitled *Methodology for Estimating the Fiscal Impact of the Costs Incurred by the Government of Canada in Support of the Mission in Afghanistan* with staff from the Parliamentary Budget Office. Col. Fetterly was employed as the deputy commanding officer of the Canadian contingent in the United Nations Disengagement Observer Force in the Golan Heights during the second intifada in 2000-2001. He has served as an air force squadron logistics officer and as a finance officer at military bases across Canada.

An adjunct professor at the Royal Military College of Canada (RMC) department of management and economics, and a Senior Fellow with the Centre for Security Governance, Dr. Fetterly has a B.Comm (McGill), M.Admin (University of Regina) and an MA and PhD in war studies from RMC. His PhD fields of study included defence economics, defence policy and defence cost analysis. His primary research focus is defence resource management. Dr. Fetterly also teaches courses in financial decision-making, defence resource management and government procurement at RMC. Through his company, Ross Fetterly Consulting Inc., he teaches a defence resource management course and a business planning course internationally for the Department of National Defence to senior military officers and defence executives in developing countries.

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