

Capturing Lessons That Should be Learned: An After Event Review for Whole-of-Government Security Planning and Operations

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Abstract: In February 2010, Canada hosted the Vancouver 2010 Winter Games. To ensure a *Safe and Secure Games*, multiple safety and security agencies at three levels of government had to work in an unprecedented partnership for security planning and operations. This whole-of-government approach to domestic safety and security, often bringing together non-traditional partners, provided a unique opportunity to analyze collective strengths and weaknesses and to make suggestions for process improvements in future domestic inter-organizational public safety or security events. Defence Research and Development Canada – Centre for Security Science undertook an After Event Review which incorporated qualitative operational research methods into a Lessons Learned process. Typically a Lessons Learned cycle involves five steps: preparation, collection, analysis, endorsement, and change. Often, the process relies upon initial observations without the benefit of independent analysis. The After Event Review refined the preparation, collection and analysis stages by focusing on analytical methodologies and inserting subject matter expert validation throughout the process. Beginning with a mission analysis in the preparation phase, the researchers were able to determine the expected outcomes against which to appraise the ability of the partners' collective success. It was also necessary to determine a capability framework against which to assess the overall planning and operations. For this purpose, the US Department of Homeland Security's Target Capability List was selected. During the collection phase, interview surveys, a social network analysis and case studies were employed and resulted in the identification of nine critical issues for analysis. Using the capability assessment approach, the researchers were then able to identify best practices and corrective actions which could be applied to future domestic security operations. Subject matter experts were consulted throughout to determine if the findings were indicative of operational realities. The resulting conclusions could lead to recommendations for the consideration of change authorities within the federal security community. The enhanced Lessons Learned approach gave the final results a level of validation that may not normally be recognized through a less thorough process.

Keywords: Lessons Learned, After Event Review, Social Network Analysis, V2010, Security Planning, Operational Research

1. Background

In February 2010, Canada hosted the Vancouver 2010 Winter Games (V2010). To ensure a "safe and secure Games," multiple safety and security agencies at three levels of government had to work in an unprecedented partnership for security planning and operations. This whole-of-government¹ approach to domestic safety and security, often bringing together non-traditional partners, provided a unique opportunity to analyze collective strengths and weaknesses. Defence Research and Development Canada – Centre for Security Science (DRDC CSS) undertook an After Event Review (AER) which incorporated qualitative operational research methods into a Lessons Learned process. The objective of the AER was to identify and analyze critical issues common to the federal security

¹ "Whole of government" denotes public service agencies working across portfolio boundaries to achieve a shared goal and an integrated government response to particular issues. Approaches can be formal and informal. They can focus on policy development, program management and service delivery." Australian Public Service Commission, 2004.

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14. ABSTRACT

In February 2010, Canada hosted the Vancouver 2010 Winter Games. To ensure a Safe and Secure Games, multiple safety and security agencies at three levels of government had to work in an unprecedented partnership for security planning and operations. This whole-of-government approach to domestic safety and security, often bringing together non-traditional partners, provided a unique opportunity to analyze collective strengths and weaknesses and to make suggestions for process improvements in future domestic inter-organizational public safety or security events. Defence Research and Development Canada ? Centre for Security Science undertook an After Event Review which incorporated qualitative operational research methods into a Lessons Learned process. Typically a Lessons Learned cycle involves five steps: preparation, collection, analysis, endorsement, and change. Often, the process relies upon initial observations without the benefit of independent analysis. The After Event Review refined the preparation, collection and analysis stages by focusing on analytical methodologies and inserting subject matter expert validation throughout the process. Beginning with a mission analysis in the preparation phase, the researchers were able to determine the expected outcomes against which to appraise the ability of the partners? collective success. It was also necessary to determine a capability framework against which to assess the overall planning and operations. For this purpose, the US Department of Homeland Security?s Target Capability List was selected. During the collection phase, interview surveys, a social network analysis and case studies were employed and resulted in the identification of nine critical issues for analysis. Using the capability assessment approach, the researchers were then able to identify best practices and corrective actions which could be applied to future domestic security operations. Subject matter experts were consulted throughout to determine if the findings were indicative of operational realities. The resulting conclusions could lead to recommendations for the consideration of change authorities within the federal security community. The enhanced Lessons Learned approach gave the final results a level of validation that may not normally be recognized through a less thorough process.

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partners and to make suggestions for best practices and process improvements in future domestic inter-organizational public safety or security events.

The objective of a Lessons Learned process is to achieve performance improvement. Lessons are only “learned” through an intentional process which results in changed doctrine, operating procedures and behaviour. Organizational learning is challenging for most institutions and is only made more complex in meta-organizational (i.e., an organization of organizations) situations as is experienced in whole-of-government collaboration. One of the greatest challenges in making a Lessons Learned process an effective organizational learning tool is in how to perform an analysis that produces reliable results. The AER incorporated operational research and analysis techniques into a Lessons Learned process.

2. Lessons Learned Cycle

The Lessons Learned Cycle is based upon the premises of continuous learning as demonstrated in the “OODA Loop” (Boyd, 1987). The four steps of the loop are to:

- *Observe* actions and their effects;
- *Oriente* and analyze them to determine the basic causes and impacts and consider options for behavioural or systemic change;
- *Decide* by accepting or rejecting the options; and
- *Act* by implementing the preferred course of action.

The OODA Loop is essentially a problem solving and decision making model that allows iterative but deliberate change. Each of these steps can be embedded into a broader Lessons Learned process as illustrated in Figure 1 (adapted from Eaton et al., 2006).

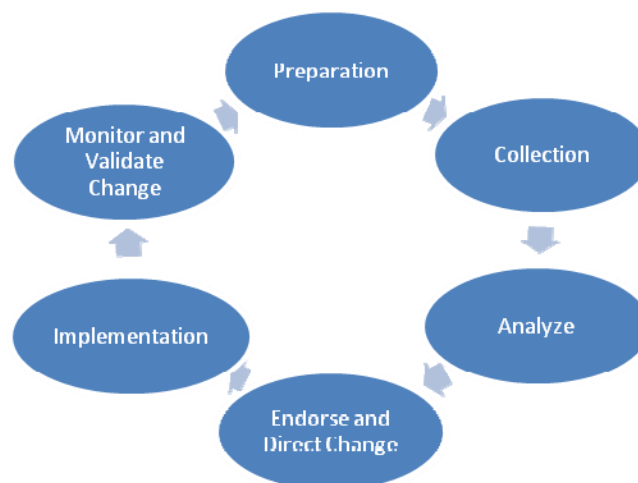


Figure 1: Lessons Learned Cycle

The Lessons Learned Cycle normally begins in anticipation of an event, such as an exercise or operation, as a result of a milestone in a process, or in the aftermath of an event. The process has six steps: preparation, collection, analysis, endorsing and directing change, implementation, and monitoring and validating change.

2.1 Preparation

Preparation includes identifying the functions and activities to be analyzed, the critical issues to be explored, and the method and details of data collection. In anticipation of the event, a change leader (the person responsible for the guiding documentation, process or event) will identify, in consultation with other planners, the main issues which should be targeted for observation, e.g., are the communications protocols between organizations functioning as required? Once the main issues are

identified, the methods of data collection should be identified and prepared. This stage should involve a mission analysis to determine the objectives of the process or event.

2.2 Collection

Collection is the process of observing, collecting data, and identifying lessons. This involves the actual data collection during or post-event by employing either observers or participants. Collection can occur through observation and check-lists, surveys, interviews, data collection and after action reviews. Ideally, it can occur during the event, but may require post-event collection as well.

2.3 Analysis

Analysis is the systematic identification of issues, the objective analysis of the data, and the validation of results with subject matter experts (SMEs). Whether scientifically rigorous or not, analysis is important in processing subjective observations and dismissing the spurious assumptions to find authentic solutions. An important portion of this process is validation, whereby SMEs at various levels determine if changes and solutions are workable. This can be accomplished through individual consultation or in an organized conference of stakeholders.

2.4 Endorsing and Directing Change

Endorsing and directing change is the stage at which recommendations for corrective actions and best practices are made to the change authorities (decision makers), who in turn accept or reject the proposed changes. This occurs when the change authority considers the options and either rejects or endorses recommendations. It is then the responsibility of the change agent or other officials to enact the change.

2.5 Implementation

Implementation involves integrating the identified lessons into existing documentation, training, and processes. This systemic change should beget behavioural change. During implementation, it is the responsibility of the designated or multiple change agents to initiate and manage the recommended best practices or corrective measures.

2.6 Monitoring and Validating Change

Monitoring and validating change is the confirmation that the recommendations have been implemented and verification that the changes are effective. The change agent reports back to the decision-maker and stakeholders as to the implementation and effectiveness of the change. It is at this stage that the Lessons Learned Cycle begins again.

3. Methodology

3.1 Mission Analysis

Clarifying mission objectives is an important aspect of the preparation stage in a Lessons Learned process. It provides a baseline from which to ascertain whether the mission was successfully achieved and what facilitated or hindered that. It also enables stakeholders to learn how to better perform in future situations. In the case of whole-of-government security planning for V2010, the mission was clear: *a Safe and Secure Games*. The mission essential components, (indicators of a successful mission), or the operational objectives from a whole-of-government point of view,(how the mission was to be accomplished), were not as clearly articulated.

It was necessary, therefore, to retrospectively determine what these components and objectives were in order to frame the lessons learned process overall. For example, one mission essential component was deemed to be the need to *provide a safe and secure environment for a successful international sporting event – including regional celebrations and the protection of Internationally Protected Persons and other dignitaries*. Likewise, an operational objective for the whole-of-government

approach would be to *test and confirm federal operational interoperability and readiness for V2010*. This mission analysis created the structural basis for scoping the overall project.

3.2 Critical Issues

The first step in the methodology of the AER process was the identification of critical issues, which further aided the development and structuring of the rest of the methodology, as well as guided and focused data collection. In order to identify the critical issues, V2010 planning phase documentation, lessons learned reports from the exercise program, and post-event reports from individual partner departments and agencies were reviewed and analyzed. Through this process, five main critical issues arising out of federal whole-of government security planning and operations were identified for exploration. These included such issues such as information sharing between partners. Based on the critical issues, research questions were developed. The questions were used to guide the structured portion of the interviews which followed.

3.3 Data Collection

The data collection was comprised of four analytical processes:

- Collection of documentation and reports from the planning phase, the exercise program, and post-event. These were primarily used to guide the identification of critical issues and later to validate preliminary findings.
- Interviews of senior officials who occupied pivotal positions at the strategic-operational interface during V2010 planning and operations.
- Collection of social network analysis data. The first phase data was collected as part of the interviews while second phase data was collected by means of a web-based survey.
- Collection of case studies data in three domain areas of: Critical Infrastructure Protection, Chemical, Biological, Radiological, Nuclear and Explosives (CBRNE) preparedness, and inter-agency cooperative information sharing as examined in the Olympic Marine Operations Centre. The case study data was collected as part of the initial interviews as well as through follow-up interviews of key stakeholders who were directly involved, at both the strategic and operational levels, in each of the three domains.

3.4 Assessment Criteria

To provide scientific rigour to the data analysis, appropriate benchmarks were required against which results could be assessed. Currently, Canada does not have comprehensive, accepted and standardized national benchmarks against which to assess capabilities. Given this, the Target Capabilities List (TCL) developed by the Federal Emergency Management Agency was used as a benchmark for the assessment (US Department of Homeland Security, 2007). In instances where the subject was not within the scope of the TCL, other relevant best practices, extracted from literature, were applied in the assessment (Lemyre, 2010)

3.5 Limitations and Constraints

It is important to acknowledge the limitations and constraints of the methodology and process which were implemented in the AER. The main constraint, given a study with such a broad scope, was keeping with tight time-deadlines while at the same time ensuring scientific rigour and integrity. The time deadlines were implemented to keep the information current and relevant and to ensure timely feedback to the relevant stakeholders. However, given the tight timelines, not all issues were explored in-depth and instead the AER focused on providing a broad overview of the main issues.

The second limitation was associated with the sole reliance on post-event data. Since the study was initiated after V2010, this precluded any opportunity for *in situ*, real-time data collection during operations. This limitation meant that the analysts had to rely on the interviewees' recall, and therefore a possibility existed that some issues may have been missed simply because the interviewees may have forgotten about them. This was mitigated by the relatively large number of interviewees, many with overlapping experiences, and by employing data validation methods as outlined below.

Finally, since the analysis employed in this study consisted largely of the synthesis of the experiences and opinions expressed by the interviewees, there was a danger of "confirmation bias", or the tendency to form early opinions and selectively favour data that validated those opinions. In order to avoid this phenomenon, the analysts continuously challenged one another's assumptions and collectively identified any major themes arising from the interviews, thus eliminating issues which were not broadly acknowledged. Furthermore, where possible, analysis and conclusions were validated by SMEs and compared with any available literature and supporting documentation. The final results were also peer-reviewed.

3.6 Interviews

As the AER was focused on strategic issues related to V2010 security planning and operations, the interviewees were selected from the population of senior officials representing all of the main partner organizations and who operated at the strategic-operational interface. The interviewees held a unique perspective, which enabled them to provide views on the impact of strategic decisions on operations, as well as the influence of operations on strategy. Initially, 30 potential interviewees were selected based on their knowledge of their respective departments and agencies, as well as their personal involvement in planning and operations. The target group of interviewees was eventually expanded to 41, when it was determined that the breadth of partner departments and agencies, as well as the diversity of roles, could not be covered by a smaller sample.

The criteria for the choice of analysts who conducted the interviews and performed the subsequent analysis was also important. The interviewers consisted of three operational research scientists and the primary author of this paper with a background in knowledge management. Although all the interviewers came from Defence R&D Canada, an organization which was heavily involved in V2010 security planning and operations, none of the individuals chosen for the AER work were involved in those activities. As such, the interviewers had little prior knowledge of the topic of the study, thus ensuring external, independent and unbiased analysis.

The interviews were guided by a questionnaire which was developed through analysis of critical issues as described above. The interviewees were asked to:

Please reflect on the strategic and operational experience that you gained from your involvement in planning and operations for V2010 when answering the following questions.

1. *From a whole-of-government perspective, what did you learn about planning and operations for major events?*
2. *Do you have any particular suggestions or observations pertaining to federal whole-of-government major event planning and operations in the following areas:*
 - a) *Governance?*
 - b) *Inter-agency relationships?*

- c) *Sensitive information sharing?*
 - d) *Assessment and protection of national, provincial and regional critical infrastructure?*
3. *How do existing federal government mandates enable or hinder the whole-of-government public safety and security approach for major events?*
 4. *Can you describe an example of learning or innovation that occurred within your organization as a result of inter-agency involvement in planning and operations for the Games?*
 5. *How will your organization make use of what it has learned for future, major inter-agency events?*

Most of the interviews were recorded and all of the recordings were transcribed. Both the recordings and the transcriptions were labeled using codes to protect the confidentiality of the respondents. Once transcribed, the recordings were destroyed.

Initially, the interviews were quite structured, closely following the questionnaire; however, over time they evolved to a less structured format. More probing questions emerged as the interviewer's experience and level of comfort with the topics at hand grew. Furthermore, it became apparent that flexibility and adaptability was needed, based on the particular experiences of individual interviewees as well as their personalities, and the culture and operational model of their organizations. For example, interviewees who came from "uniformed" police and military organizations, which tend to have more "tight" and formalized cultures, generally preferred the structured interview format and rarely ventured beyond the scope of the questionnaire. On the other hand, some interviewees preferred to "tell stories" rather than strictly follow the questionnaire.

The analysis of the interview data consisted of coding the interview transcripts using QSR NVIVO software. The codes were developed based on the initially defined critical issues as well as major themes which emerged through the interview process. Seven main themes were identified through extensive discussion and collective analysis of the transcripts by the analysts. These included topics such as governance, exercises and the roles of culture and personality.

To ensure that all analysts consistently interpreted the codes, some of the transcripts were analyzed by more than one individual, and then compared for uniformity of coding. Even after the coding work was divided up among the analysts, frequent meetings were held to discuss the findings and progress and to ensure consistency of the analysis approach. Once all the transcripts were coded, the information was sorted according to individual codes and divided up among the analysts responsible for their respective issues.

Throughout the interviews and the subsequent analysis, care was taken to protect the privacy of the interviewees. It was important for the study that the interviewees spoke on the condition of anonymity, with the intention that this would provide more candid information and allow individuals to address issues which they may otherwise not be comfortable discussing. To ensure that the identity of the interviewees was protected, all electronic files were labeled with randomized codes and precautions were taken with data storage and sharing. All the recordings, transcriptions, and notes taken by the interviewers were destroyed after they were analyzed and the relevant information extracted. Furthermore, the interview results were anonymized to the point where they could not be attributed to any single individual. For example, any direct quotations used in the analysis were stripped of any detail which could potentially identify an individual.

3.7 Social Network Analysis

Social network analysis (SNA) is the study of relationships between people and organizations. By compiling individual relationship links between members of a group, a network is derived that can be analyzed to understand interactions and positions within a social group. An SNA was undertaken as part of the AER to identify information-sharing relationships that existed between the people who were involved in V2010 security planning and operations. Given that individuals represented different departments and agencies, the SNA provided a means of assessing the state of whole-of-government cooperation.

The following overarching research questions were used to guide the SNA and provide a structure for the analysis:

- *Are the people and organizations that should be contact with one another actually in contact to facilitate major events security planning?*
- *Are the interactions the organizations reported in the social network analysis consistent with the interview findings?*
- *Which are the central organizations in the network?*

Forty interviewees completed the SNA portion of the study. The interviewees were asked to record as many names as desired based on their response to the following question: *“Who were the key people with whom you shared information on V2010 planning and operations?”* Since the question was posed during the interviews it was designed to be very general in order not to limit free recall. While information sharing typically implies both transmitting and receiving information, the question did not specify this directly nor did it ask the respondents to specify the frequency of interaction. The interpretation was left up to the individual interviewees, and therefore the only thing that could be established with certainty from the data collected, was whether an information sharing relationship was present or not. The 40 respondents nominated a total of 341 key contacts that were assembled into a social network which is shown in Figure 2.

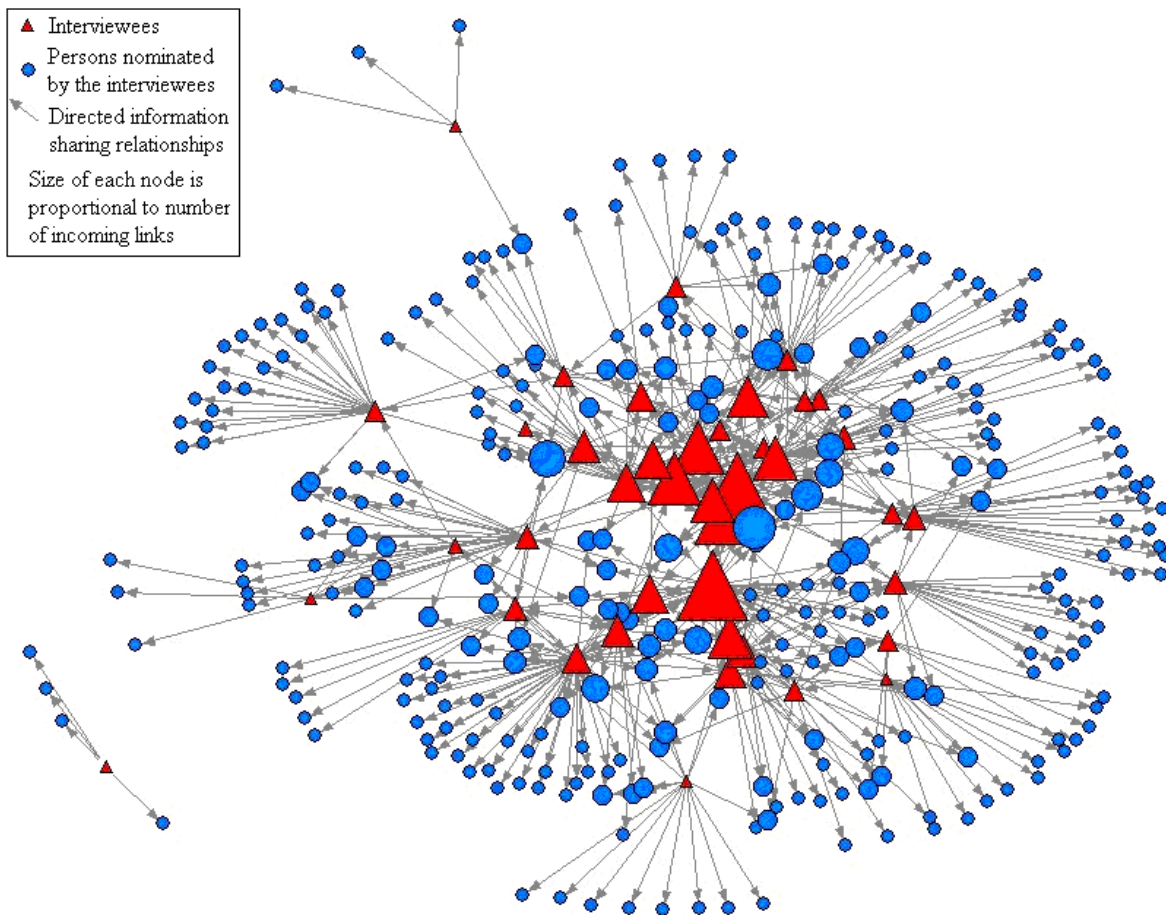


Figure 2: Social network diagram representing key person-to-person information sharing relationships during V2010 security planning and operations.

The person-to-person information sharing network gave insight into relationships between V2010 security and safety stakeholders and analysis of the positioning of individuals in the network provided valuable information about that the different roles the individuals played in the network. For example, analysis revealed that some individuals served as a bridge, or information sharing conduit, connecting otherwise disconnected individuals. The SNA also revealed that approximately 55% of the interviewees appeared as central figures in the network, confirming the appropriate choice of the sample population. A separate analysis was undertaken that looked at key information sharing relationships between the organizational entities, as opposed to individuals. This analysis revealed which organizations served as intermediaries, linking together different communities, and which operated more on the periphery of the network.

While the data collected through the SNA proved very valuable it is important to recognize its limitations. Firstly, data was obtained from the 40 interviewees only therefore the scope of the analysis was necessarily limited to a specific category of individual. Secondly, the data was collected at the level of the individual and therefore there was a possibility that some interviewees may have overstated their connections in order to portray themselves in a positive light. To counteract this tendency, during the interviews, the interviewers sought to limit the appearance of expectations concerning the number of identified contacts and emphasized the need to convey only key contacts. Another limitation is that missing or incomplete data was especially problematic as it could lead to skewed results with some individuals being either underrepresented or overemphasized. To address this issue, a follow-up on-line survey was administered to gather social network data from 72

additional individuals who were not interviewed, but who were identified by more than one of the interviewees as being key contacts. Notwithstanding the limitations of the data, the SNA portion of the AER provided valuable insight into the information sharing relationships which existed within the security and safety communities during V2010 planning and operations. The results both complemented and supported the interview data.

3.7 Case Studies

Three case studies were selected as topics which would provide a more in-depth exploration of the critical issues. Both CBRNE preparedness and Critical Infrastructure Protection were challenging cross-cutting topics which involved multiple organizations and inter-jurisdictional discussions. By exploring them in more detail, it was anticipated that the analysis could indicate how these topics might be managed in future event planning and in normal operations. The Olympic Marine Operations Centre was selected as a case study illustrating inter-agency cooperative information sharing because it was one of the operational centres which were considered to be particularly successful in managing organizational information sharing barriers. Although more in-depth, the case studies followed the same analytical pattern as the issues analysis, including a capability analysis.

Some of the case study data was obtained during the initial interviews with officials who were directly involved in the three chosen topics, however many follow-up interviews were scheduled with other pertinent individuals who were not a part of the original group of 41 interviewees. One issue which arose, because of the large number of individuals from whom input was solicited, was that at times diverging accounts and opinions of certain outcomes were recalled. This put added pressure on the analysts to fact-check and validate all accounts. Another challenge was that DRDC staff had been heavily involved in each of the three case study areas in the planning leading up to V2010 and it was recognized that there might be a danger of bias in the analysis. To compensate for this, the analysts were required to validate their findings with non-DRDC SMEs.

4. Discussion

While the conclusions of the study have not been disseminated and cannot be shared outside of the stakeholder group, the results have shown that the challenges of whole-of-government initiatives most often involve complex or systemic issues that are not easily resolved. The AER itself, however, illustrated both benefits and challenges to the Lessons Learned process as it pertains to meta-organizational learning.

Firstly, the validity of the conclusions of a Lessons Learned process is heavily dependent on the reliability of the analysis. The AER's concentration on the analytical approach was able to produce results that were considered rigorous and reliable by the stakeholders. The analysis relied upon the "evidence" provided by the subjects; the views had to be validated, first by complimentary evidence from other subjects and secondly by independent SMEs. Similarly, potential solutions posited by the analytical team had to be verified and confirmed by a diversity of SMEs. This approach provided the stakeholders with confidence that the analysis was reliable and not subjective.

Secondly, the capability assessment provided a mechanism against which to compare, even benchmark, whole-of-government capability. Without the use of such tools as the TCL, it would have been difficult to determine how future initiatives might be sustained or improved. The TCL is a comprehensive list of best practices in the public safety and security domain and was able to serve as a *de facto* standard for some of the issues, e.g., information sharing, planning and exercises. Unfortunately, such capability lists are not available for all aspects of meta-organizational issues and literature reviews were undertaken to provide guidance for other topics, e.g., governance, culture and personality (Lemyre, 2010).

The most significant challenge to the AER as a meta-organizational Lessons Learned process was the need to engage all of the partner agencies in a non-threatening way. The participant organizations needed to be assured that they were not be evaluated or judged. This was accomplished through extensive communications in explaining the objective of a Lessons Learned process to be “no fault” and to search for issues of mutual concern. The consultation and engagement of SMEs throughout the process ensured that delicate issues were handled sensitively and that assumptions were appropriately questioned.

In terms of the challenges associated with integrating Lessons Learned processes in a whole-of-government context, while similar to those of individual organizations, they are exacerbated by the complexity posed in meta-organizations. For lessons to be truly learned, organizational and behavioural change can only result when a change authority accepts the proposed best practices or corrective actions and directs that they are implemented. It may be difficult to determine who the appropriate change authority is in an individual organization and even more difficult to convince that individual of the need for implementation. In a whole-of-government lessons learned process, it is more complicated to determine who should, or even can, influence or direct change. Solid analysis, therefore, is critical to positioning the results for endorsement by the change authorities in situations where they could impact many organizations.

5. Conclusion

The AER process described here covered only the first three stages of the Lessons Learned Cycle. Each stage of the Cycle poses its own challenges and the analysis phase can often be overlooked or underestimated in traditional Lessons Learned processes. The AER applied a robust approach to the analysis stage with a four methodology approach: document and literature review, interviews, social network analysis and case studies. The capability analysis provided an additional benchmarking framework. It is through this robust analytical process that stakeholders can be assured of the thoroughness of the results and can therefore make informed decisions on complex issues.

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