NORTH ATLANTIC TREATY ORGANIZATION

SCIENCE AND TECHNOLOGY ORGANIZATION

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RTO TECHNICAL REPORT **TR-HFM-163**

Improving the Organisational Effectiveness of Coalition Operations

(Amélioration de l'efficacité structurelle des opérations en coalition)

This document is the Final Report of RTO Task Group HFM-163.

Published November 2012

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Edited by

Y. Yanakiev and J.S. Horton

The NATO Science and Technology Organization

Science & Technology (S&T) in the NATO context is defined as the selective and rigorous generation and application of state-of-the-art, validated knowledge for defence and security purposes. S&T activities embrace scientific research, technology development, transition, application and field-testing, experimentation and a range of related scientific activities that include systems engineering, operational research and analysis, synthesis, integration and validation of knowledge derived through the scientific method.

In NATO, S&T is addressed using different business models, namely a collaborative business model where NATO provides a forum where NATO Nations and partner Nations elect to use their national resources to define, conduct and promote cooperative research and information exchange, and secondly an in-house delivery business model where S&T activities are conducted in a NATO dedicated executive body, having its own personnel, capabilities and infrastructure.

The mission of the NATO Science & Technology Organization (STO) is to help position the Nations' and NATO's S&T investments as a strategic enabler of the knowledge and technology advantage for the defence and security posture of NATO Nations and partner Nations, by conducting and promoting S&T activities that augment and leverage the capabilities and programmes of the Alliance, of the NATO Nations and the partner Nations, in support of NATO's objectives, and contributing to NATO's ability to enable and influence security and defence related capability development and threat mitigation in NATO Nations and partner Nations, in accordance with NATO policies.

The total spectrum of this collaborative effort is addressed by six Technical Panels who manage a wide range of scientific research activities, a Group specialising in modelling and simulation, plus a Committee dedicated to supporting the information management needs of the organization.

- AVT Applied Vehicle Technology Panel
- HFM Human Factors and Medicine Panel
- IST Information Systems Technology Panel
- NMSG NATO Modelling and Simulation Group
- SAS System Analysis and Studies Panel
- SCI Systems Concepts and Integration Panel
- SET Sensors and Electronics Technology Panel

These Panels and Group are the power-house of the collaborative model and are made up of national representatives as well as recognised world-class scientists, engineers and information specialists. In addition to providing critical technical oversight, they also provide a communication link to military users and other NATO bodies.

The scientific and technological work is carried out by Technical Teams, created under one or more of these eight bodies, for specific research activities which have a defined duration. These research activities can take a variety of forms, including Task Groups, Workshops, Symposia, Specialists' Meetings, Lecture Series and Technical Courses

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Table of Contents

List of Figures

List of Tables

List of Acronyms

AAR	After Action Review
ACOS	Assistant Chief Of Staff
ACT	NATO Allied Command Transformation
AFRL	U.S. Air Force Research Laboratory
ARI	US Army Research Institute for the Behavioural and Social Sciences
BEM	Behavioural Engineering Model
BIH	Bosnia and Herzegovina
C2	Command and Control
CTEF	Command Team Effectiveness Model
DARI	Defence Advanced Research Institute
DEOMI	U.S. Defense Equal Opportunity Management Institute
DRDC	Defence Research and Development Canada
EM	Expectation Maximization estimation
ET	RTO Exploratory Team
ETH	Swiss Federal Institute of Technology
FFI	Norwegian Defence Research Establishment
FOI	Swedish Defence Research Agency
HFM	Human Factors and Medicine Panel
HO/TO	Hand-Over/Take-Over
HQ	Headquarter
HSG	Headquarters Support Group
ICC	Inter-organisational Collaborative Capacity model
INDC	Israeli National Defence College
ISAF	International Security Assistance Force
JFC	Joint Forces Command
JIC	Joint Intelligence Cell
KFOR	NATO Kosovo Force
KSF	Kosovo Security Force
LEGAD	Legal Advisor
LL	Lessons Learned
LTCRs	NATO Long-Term Capability Requirements
MCA	Military Civil Advisory Division
MD	Mediterranean Dialog
MEDAD	Media Advisor
NA5CRO	Non-Article 5 Crisis Response Operations
NAVAIR	U.S. Naval Air Systems Command
NDC	NATO Defence College
NNEC	NATO Network-Enabled Capabilities

Pd	Power distance
PfP	Partnership for Peace
PRISM	Performance, Role interdependence, Information Sharing Model
PRTs	Provincial Reconstruction Teams
RMA	Royal Military Academy
RSY	RTO Symposium
RTA	NATO Research and Technology Agency
RTB	NATO Research and Technology Board
RTG	RTO Task Group
RTO	NATO Research and Technology Organization
SAS	NATO RTO System Analysis and Studies Panel
SEA	Systems Engineering and Assessment Ltd.
SFOR	NATO Stabilization Force
SMEs	Subject-Matter Experts
SOPs	Standing Operating Procedures
SWOS	U.S. Surface Warfare Officers' School
TNO	Defence, Security Safety Netherlands

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The views, opinions, and/or findings contained in the final report are those of the authors and should not be construed as an official NATO Research Technology Organization or Allied Command Transformation position, policy, or decision, unless so designated by other official documentation. Nor should the views, opinions, and/or findings contained in the report be construed as an official position, policy, or decision of the participating Nations.

HFM-163 Membership List

CHAIRMAN

Capt. (BGR-N) Prof. Yantsislav YANAKIEV
D.Sc. Director of Defence Advanced Research Institute (DARI)
G.S. Rakovski National Defence Academy
82 Evlogi & Hristo Georgievi Blvd
1504 Sofia
BULGARIA
Tel: +359 (2) 92 26538 / Fax: +359 2 9441657 / Mobile: +359 2 498977
Email: yanakievy@md.government.bg / yanakiev@pims.org

MEMBERS

BELGIUM

Dr. Delphine RESTEIGNE*
Royal Military Academy (RMA)
Avenue de la Renaissance 30
1000 Brussels
Tel: +32 2 742 66 13
Fax: +32 2 742 66 12
Email: Delphine.Resteigne@rma.ac.be

CANADA

Dr. Ann-Renee BLAIS*
Collaborative Performance and Learning Section
Defence R&D Canada Toronto
1133 Sheppard Avenue West
P.O. Box 2000, Toronto Ontario M3M 3B9
Tel: +1 416-635-2000 x3082
Fax: +1 416-635-2191
Email: ann-renee.blais@drdc-rddc.gc.ca

NETHERLANDS

Ms. Tineke HOF*
TNO Defence, Security Safety
P.O. Box 23, 3769 ZG Soesterberg
Tel: +31 346 356 407
Fax: +31 346 353 977
Email: tineke.hof@tno.nl

NORWAY

Ms. Anne-Lise BJORNSTAD
Norwegian Defence Research Establishment (FFI)
P.O. Box 25, 2027 Kjeller
Tel: +47 63 80 77 46
Fax: +47 63 80 72 12
Email: anne-lise.bjornstad@ffi.no

* National Point of Contact

Mr. Sigmund VALAKER*
Norwegian Defence Research Establishment (FFI)
P.O. Box 25
2027 Kjeller
Tel: +47 63 80 77 46
Fax: +47 63 80 72 12
Email: Sigmund.Valaker@ffi.no

SLOVENIA

Ms. Janja VUGA*
University of Ljubljana
Faculty of Social Sciences
1000 Ljubljana
Trzaska 25
Tel: +386 15805 225
Fax: +386 15805 101
Email: janja.vuga@fdv.uni-lj.si

SWEDEN

Ms. Magdalena GRANASEN*
Swedish Defence Research Agency (FOI)
P.O. Box 1165
SE-58111 Linkoping
Tel: +46 70 9277145
Fax: +46 13 124938
Email: magdalena.granasen@foi.se

Ms. Jenny MARKLUND
Swedish Defence Research Agency (FOI)
Gullfossgatan 6
SE-164 40 Kista
Tel: +46 70 9277476
Fax: +46 8 555 038 66
Email: jenny.marklund@foi.se

SWEDEN (cont'd)

Dr. Per WIKBERG
Swedish Defence Research Agency (FOI)
Cementvägen 20, SE-90182 Umeå
Tel: +46 70 9277037
Fax: +46 90 10 68 00
Email: per.wikberg@foi.se

Dr. Erland SVENSSON
Swedish Defence Research Agency (FOI)
P.O. Box 1165, SE-58111 Linkoping
Tel: +46 13 378181
Fax: +46 13 124938
Email: erland.svensson@foi.se

SWITZERLAND

Dr. Tibor SZVIRCSEV TRESCH*
Swiss Armed Forces
Military Sociology at the Swiss Military Academy at ETH Zurich
Casern Reppischtal, 8903 Birmensdorf
Tel: +41 44 739 82 32
Fax: +41 44 739 82 00
Email: tibor.szvircsev@vtg.admin.ch

Dr. Stefan SEILER
Swiss Armed Forces
Leadership and Communication Studies at the Swiss Military Academy at ETH Zurich
Casern Reppischtal, 8903 Birmensdorf
Tel: +41 44 739 82 35
Fax: +41 44 739 82 00
Email: sseiler@ethz.ch

Ms. Esther BISIG
Swiss Armed Forces
Military Sociology at the Swiss Military Academy at ETH Zurich
Casern Reppischtal, 8903 Birmensdorf
Tel: +41 44 739 82 71
Fax: +41 44 739 82 00
Email: Esther.Bisig@vtg.admin.ch

UNITED KINGDOM

Dr. Georgina FLETCHER*
Systems Engineering and Assessment Ltd. (SEA)
SE House Bristol Business Park
Coldharbour Lake
Bristol BS16 1EJ
Tel: +44 1373 852 314
Fax: +44 1179 691 177
Email: Georgina.Fletcher@sea.co.uk

* National Point of Contact

UNITED STATES

Dr. Janet SUTTON*
U.S. Air Force Research Laboratory (AFRL)
711 Human Performance Wing Human Effectiveness, Cognitive Systems Branch
Wright-Patterson AFB, OH 45433
Tel: +1 937-656-4316
Fax: +1 937-255-6555
Email: janet.sutton@wpafb.af.mil

Dr. Joseph LYONS
Program Manager AFOSR/RSL
875 N. Randolph Street, Suite 325
Arlington, VA 22203
Tel: +1 703-696-6207
Email: joseph.lyons@afosr.af.mil

Dr. Erin MOESER
Defense Equal Opportunity Management Institute (DEOMI)
366 Tuskegee Airmen Drive
Patrick Air Force Base
FL 32925-3399
Email: Erin.Moeser.ctr@patrick.af.mil

Dr. Daniel MCDONALD
Defense Equal Opportunity Management Institute (DEOMI)
366 Tuskegee Airmen Drive
Patrick Air Force Base, FL 32925-3399
Tel: +1 321-494-2746
Fax: +1 321-494-4116
Email: Daniel.mcdonald@patrick.af.mil

Mr. Jerry SCARPATE
Defense Equal Opportunity Management Institute (DEOMI)
366 Tuskegee Airmen Drive
Patrick Air Force Base, FL 32925-3399
Tel: +1 321-494-2676
Fax: +1 321-494-4116
Email: Jerry.scarpate@patrick.af.mil

Dr. Linda PIERCE
US Army Research Institute for the Behavioural and Social Sciences (ARI)
Bldg 520, Room 27, Aberdeen Proving Ground
MD 21005-5425
Tel: +1 410-278-5967
Fax: +1 410-278-3587
Email: linda.pierce@us.army.mil

UNITED STATES (cont'd)

Dr. Carol PARIS
Naval Air Systems Command (NAVAIR)
12350 Research Parkway
Orlando, FL 32826-3275
Tel: +1 407-380-4768
Fax: +1 407-380-4110
Email: Carol.paris@navy.mil

NATO SCHOOL

Ms. Liliana SERBAN*
NATO School
Am Rainenbichl 54
82487 Oberammergau
GERMANY
Tel: +49 8822 9481 2604
Fax: +49 8222 9171 2604
Email: SERBAN.Lilian@natoschool.nato.int

* National Point of Contact

DATES AND PLACES OF NATO HFM RTG 163 MEETINGS

- 23-25 January 2008, Research and Technology Agency HQ, Paris, France
- 22-24 October 2008, NATO School, Oberammergau, Germany
- 7-9 June 2009, NATO ACT, Norfolk, VA, USA
- 27-29 October 2009, National Defence College, Tel Aviv, Israel
- 7-10 June 2010, Defence Research and Development (DRDC), Ottawa, Canada
- 10-15 October 2010, Field trip for data collection, KFOR HQ, Pristine, Kosovo
- 8-11 November 2010, NATO Defence College, Rome, Italy
- 7-9 March 2011, Defense Equal Opportunity Management Institute (DEOMI), Patrick AFB, Florida, USA
- 29-31 August 2011, Royal Military Academy, Brussels, Belgium

Improving the Organisational Effectiveness of Coalition Operations

(RTO-TR-HFM-163)

Executive Summary

The Purpose

The NATO Research and Technology Organisation (RTO) Human Factors and Medicine (HFM) Panel Task Group (RTG) – 163 titled *Improving the Organisational Effectiveness of Coalition Operations* was established to identify organisational and cultural factors critical to effective cooperation in coalition operations with particular focus on organisational effectiveness of NATO operational level Headquarters (HQs). More precisely, the goals of the HFM-163 – RTG were:

1) To identify critical factors to effective coalition operations (e.g., leadership, national culture, organizational culture/structure, information sharing) using extant data and research literature;
2) To investigate potential models and tools for understanding, explaining, and measuring different aspects of effective adaptation and cooperation in multi-national coalitions; and
3) To make recommendations regarding improvement of education and training of NATO and partner countries' militaries for coalition operations.

Scope and Limitations

We decided to limit our research to organisational effectiveness of Coalition's HQ implementing Non-Article 5 Crisis Response Operation and to focus on evaluation of internal processes in the HQ. Therefore, factors external to the organisation and to the context of the operation were not examined in this study.

Results, Significance to NATO and Practical Implications

The NATO HFM-163 Task Group developed and tested a model of organizational effectiveness in operational NATO Headquarters (HQs). The model included input factors, the operative goals of the organization, as well as the relationships between the input factors and operative goals. Initial interviews conducted with military Subject-Matter Experts (SMEs) highlighted structure and processes, people, and culture as important input factors to consider. Effective and timely decision making, information sharing, and shared awareness of task and responsibilities were identified as important operative goals. These aspects were in line with existing general and military models of organizational effectiveness, but our model also emphasized factors of particular relevance to a military HQ, such as rotation practices.

In addition, the paper summarises some practical implications to improve organisational effectiveness of NATO operational HQs focusing on:

1) Enhancing the congruence between the way people are accustomed to working and the manner in which the HQ is organised;
2) Developing and applying transformational leadership in multi-national environment;
3) Improving managing processes in the HQ and the rotation practices;

4) Enhancing trust in multi-national coalitions; and

5) Reducing the challenges of multi-nationality.

Research findings are expected to help military leaders and Nations identify training gaps that can be addressed in future pre-deployment training and improved ways of working in a multicultural environment. This was a direct contribution to one of the basic NATO Long-Term Capability Requirements, namely Human Performance Improvement in military operations.

Amélioration de l'efficacité structurelle des opérations en coalition

(RTO-TR-HFM-163)

Synthèse

Objectif

Le groupe de travail RTG-163 du comité « Facteurs humains et médecine » (HFM) de l'Organisation OTAN pour la recherche et la technologie (RTO), dénommé « *Improving the Organisational Effectiveness of Coalition Operations* » (*ca*. Amélioration de l'efficacité structurelle des opérations en coalition) a été créé pour identifier les facteurs structurels et culturels cruciaux influant sur l'efficacité de la coopération dans les opérations en coalition, et ce, en portant plus particulièrement son attention sur l'efficacité structurelle des quartiers généraux (HQ) du niveau opératif de l'OTAN. Plus précisément, les objectifs du groupe de travail HFM-163 étaient :

1) Identifier les facteurs cruciaux influant sur l'efficacité des opérations en coalition (par ex. : façon de commander, culture nationale, comportements/structure organisationnels, partage des informations) en utilisant les données et les travaux de recherche existants ;
2) Examiner les modèles et outils potentiels permettant de comprendre, expliquer et mesurer les divers aspects d'une adaptation et d'une coopération efficaces dans les opérations en coalition ; et
3) Faire des recommandations relatives à l'amélioration de la formation et de l'entraînement des armées des pays membres et partenaires de l'OTAN en vue d'opérations en coalition.

Portée et limites

Nous avons décidé de limiter nos recherches à l'efficacité structurelle d'un quartier général de coalition mettant en œuvre une opération de réponse aux crises ne relevant pas de l'Article 5 et de nous concentrer sur l'évaluation des procédures internes au quartier général. Par conséquent, les facteurs externes à l'organisme et au contexte de l'opération n'ont pas été abordés dans la présente étude.

Résultats, importance pour l'OTAN et implications pratiques

Le groupe de travail HFM-163 de l'OTAN a conçu et testé un modèle d'efficacité structurelle pour les états-majors opératifs de l'OTAN. Ce modèle comprenait : des facteurs externes, les objectifs opérationnels de l'organisme, ainsi que les relations entre les facteurs externes et les objectifs opérationnels. Les entretiens initiaux menés avec des militaires experts en la matière ont mis en évidence que la structure et les procédures ainsi que les gens et la culture sont des facteurs externes importants à prendre en compte. Une prise de décision efficace et en temps opportun, un partage de l'information ainsi qu'une conscience commune de la tâche et des responsabilités ont été identifiés comme étant des objectifs opérationnels majeurs. Ces aspects étaient conformes aux modèles généraux et militaires d'efficacité structurelle ; cela étant, notre modèle a également mis l'accent sur des facteurs particulièrement importants pour un quartier général militaire : les pratiques de relèves régulières, par exemple.

De plus, le document récapitule quelques implications concrètes en vue d'améliorer l'efficacité structurelle des états-majors opératifs de l'OTAN en insistant sur :

1) L’amélioration de l’harmonisation entre les habitudes de travail du personnel et la manière dont le quartier général est organisé ;
2) Le développement et la mise en application de la conduite du changement dans un cadre multinational ;
3) Le perfectionnement des méthodes de direction dans le quartier général, et des pratiques de relèves ;
4) L’augmentation de la confiance dans les coalitions multinationales ; et
5) La réduction des obstacles liés à la pluralité de nationalités.

Les résultats de la recherche doivent aider les pays et les chefs militaires à identifier, d’une part, les lacunes en matière d’entraînement pouvant être comblées grâce aux futurs exercices préalables à un déploiement et, d’autre part, de meilleures façons de travailler dans un cadre multiculturel. Cette recherche constitue un élément de réponse immédiat à l’un des besoins capacitaires à long terme de l’OTAN, à savoir : l’amélioration de l’ergonomie (*Human Performance Improvement*) dans les opérations militaires.

Chapter 1 – INTRODUCTION

by

Y. Yanakiev, T. Szvircsev Tresch and J. Sutton

1.1 BACKGROUND

During the post-Cold War era there has been a significant increase in the number of military operations that have required NATO Nations and partners to contribute forces as part of multi-national coalitions. These coalitions execute a variety of missions like peacekeeping, peace enforcement, anti-terrorist, stability and support, search and rescue, humanitarian aid, etc.

Researchers and practitioners agree that the political legitimacy, the acceptance by the native population and the cost-effectiveness of the mission are among the most important advantages of these multi-national coalitions. Simultaneously, the effectiveness of the multi-national forces has been a controversial issue over a rather long period of time. Recent studies show that the main turbulences that could diminish the effectiveness of international coalitions are different goals, differences in logistics, education and training of troops, different doctrines, intelligence sharing and language barriers as well as leadership skills [69],[68]. In addition, different national and organisational cultures, concepts of tactics and mission planning, disciplinary codes, command and control systems, equipment and armament, and payment differences can be viewed as challenges to the coalitions' effectiveness [45]. Sutton and Pierce (2003) [70] identified national cultural behaviours associated with high power distance and high uncertainty avoidance to clearly impact team performance in the areas of situation assessment, coordination, assigning roles and responsibilities, and support behaviour. For a detailed discussion of national cultural behavioural differences that can impact the effectiveness of multi-national coalitions, see Sutton, Pierce, Burke, and Salas (2006) [71] and see also the *Occasional Paper 23* from the NATO Defence College [20].

The factors described above operate as organisational and cultural barriers to effective collaboration in multi-national settings, and are related, to a large extent, to the preparation of military leaders and teams to work in a coalition environment.

In recent years, there has been a growing interest in the factors and issues related to culture, coalitions and multi-national operations, for example, training, leadership, teamwork, command and control, inter alia. Consequently, NATO Research and Technology Organization (RTO) Human Factors and Medicine (HFM) Panel set up a Meta-Exploratory Team (ET) HFM-067 in 2006 to reinforce and consolidate the research efforts of the social and behavioural scientists from interested NATO Nations who were either currently participating or not yet involved in NATO RTO activities. The basis of HFM ET-067 was the collective knowledge of four extant Research Task Groups (RTGs), i.e., HFM RTG-120 – Exploration of the Area of Multi-National Operations and Inter-Cultural Factors; HFM RTG-127 – Operational Validation of Command Team Effectiveness Instrument; HFM RTG-138 – Adaptability in Coalition Teamwork, and HFM RTG-139 – Developing National Models of Military Leadership for Improved Coalition Operation.

The HFM ET-067 identified several specific gaps in current knowledge and awareness involving cultural and organisational challenges in coalition operations. They were related, but not limited to:

1) Cultural differences, communication and language barriers as well as organizational structures;
2) Allocation of roles and responsibilities;
3) Immature team practices; and
4) Imperfect understanding of leadership roles.

In addition, the HFM ET-067 identified the need to develop models and tools for understanding, explaining and measuring different aspects of effective adaptation and cooperation in multi-national coalitions such as:

1) Models to predict individual performance, based on individual characteristics;
2) Models of the behaviour of individuals in multi-team systems;
3) Models to predict team and organizational performance;
4) Tools to measure individual differences in knowledge, skills, and ability; and
5) Tools to measure effectiveness of teams and organizations.

In 2007, the HFM Panel endorsed and the NATO Research and Technology Board (RTB) approved establishment of HFM RTG-163 titled, *Improving the Organisational Effectiveness of Coalition Operations,* as a follow up to HFM ET-067 to expand multi-national coordinated research into cultural and organisational challenges in coalition operations.

This was a direct contribution to one of the basic NATO Long-Term Capability Requirements (LTCRs), namely human performance improvement in current military operations.

1.2 OBJECTIVES

The HFM RTG-163 was established to identify organisational and cultural factors critical to effective cooperation in coalition operations with particular focus on organisational effectiveness of NATO operational level Headquarters (HQs). Research findings are expected to help leaders and Nations identify training gaps that can be addressed in future pre-deployment training and improved ways of working in a multi-cultural environment.

More precisely, the goals of the HFM RTG-163 were to:

- Identify critical factors to effective coalition operations (e.g., leadership, national culture, organisational culture/structure, information sharing) using extant data and research literature.
- Investigate potential models and tools for understanding, explaining, and measuring different aspects of effective adaptation and cooperation in multi-national coalitions.
- Make recommendations regarding improvement of education and training of NATO and partner countries' militaries for coalition operations.

1.3 METHOD OF THE WORK

First, the HFM RTG-163 built upon the existing platforms of HFM RTG-138 (Key factors identified in a Cultural Adaptability Model developed from extensive field research at multi-national HQs) and HFM RTG-127 (Command Team Effectiveness – CTEF model and tool) as a basis for examining factors that enable or hinder organizational effectiveness in coalition operations.

In addition, the research team reviewed the GLOBESMART® Commander multi-media training tool (also a product of HFM RTG-138) then organized a demonstration of the training at the NATO School, Oberammergau, Germany in October 2008 and in Plovdiv, Bulgaria in May 2008 during the International Armaments Exhibition and Conference HEMUS.

As part of its regular meetings in October 2008 and June 2009, the research team organised two focus group discussions and subsequent interviews, with participation of Subject-Matter Experts (SMEs) in coalition operations from the NATO School in Oberammergau, Germany and from the NATO Allied

Command Transformation (ACT) in Norfolk, Virginia, United States, respectively. The goals of these discussions were to:

1) Identify barriers to organisational effectiveness within NATO HQs at the operational level;
2) Help define the term "organisational effectiveness" of NATO coalition operations; and
3) Obtain suggestions for improving organisational effectiveness within NATO HQs.

The description of the results can be found in Annex A and Annex B.

Following the above activities, HFM RTG-163 efforts were then focused on development of a theoretical model to study organisational effectiveness of coalition HQs, to include assessment of research methodology and data collection tools based on review of existing organisational effectiveness models and tools as well as results from SME focus group discussions and interviews. It was decided to focus the research on Non-Article 5 Crisis Response Operations (NA5CRO) as a context of NATO Alliance's operations. The research approach distinguishes between operational and organisational effectiveness. Operational effectiveness represents factors external to an organization, whereas, organisational effectiveness represents factors that are internal to the organization. The HFM RTG-163 research team decided to limit the Task Group's effort to the evaluation of organisational effectiveness of NATO HQs instead of operational effectiveness. Correspondingly, a definition of organisational effectiveness was developed as "the alignment of various organisational effectiveness dimensions (e.g., structure, process, human resource practices, and organizational culture) to the goals of the organisation" although it was agreed that certain other factors might not be captured under that definition, including: trust, leadership, etc.

The group identified three major operative goals to focus on within the NATO HQs:

1) Information sharing;
2) Decision making (speed and quality); and
3) Developing shared awareness regarding tasks and responsibilities within the NATO HQs.

These goals were assessed in light of the NATO HQ official goal to "support troops on the ground" and to implement effective command and control functions. The theoretical model of Organisational Effectiveness of NATO HQs executing NA5CRO was summarised in a research paper presented at NATO RTO System Analysis and Studies (SAS) research symposium (NATO SAS-081/RSY) on "Analytical Support to Defence Transformation" in Sofia, Bulgaria on 26–28 April 2010 (see Annex C).

An organisational effectiveness survey questionnaire was developed and pre-tested in educational settings via structured interviews at the NATO School Oberammergau and the Bulgarian National Defence Academy in 2009 – 2010. Feedback was used to improve the survey instrument.

NATO RTO HFM Panel granted HFM RTG-163 a one-year extension to test its theoretical model. In October 2010, HFM RTG-163 initiated data collection and carried out a field study at Kosovo Force (KFOR) Headquarters, Pristine, Kosovo. The methods employed during the study in KFOR HQ were both quantitative in the form of a questionnaire and qualitative in the form of semi-structured interviews with key personnel at KFOR HQ (see Annex D and Annex E). Data were collected from 103 military members and 33 civilian HQ personnel in the quantitative survey. Among the civilians, 5 are government civilians, 12 local Kosovo Albanian, Serbian and Bosnian contractors, and 16 contractors with international background. In addition, 15 interviews were conducted mainly at the Assistant Chief of Staff (ACOS)-level, covering J1 – J5, J8, Headquarters Support Group (HSG), different structures of the Military Civil Advisory (MCA) Division and Joint Intelligence Cell (JIC). Preliminary results of the interviews and organizational assessment questionnaire were used to prepare a short report and it was presented to KFOR Commander in December 2010 (see Annex F).

The HFM RTG-163 team planned, coordinated, and executed eight meetings in the years of 2008 – 2011. As part of its regular meetings in November, 2010 at the NATO Defence College and in March 2011 at the U.S. Defense Equal Opportunity Management Institute (DEOMI), the group organised two small-scale workshops to present, discuss findings, and disseminate research results among a broader audience at each site.

An important supplement to the HFM RTG-163 Program of Work was that contributed by the RTG Chair CAPT (N) D.Sc. Yantsislav Yanakiev and members Dr. Janet Sutton and Dr. Linda Pierce. These scientists initiated a bi-lateral RTO-supported project between Bulgaria and the United States on *Understanding Factors that Influence Coalition Teamwork*. Data collection for this project occurred at the "Novo Selo" Army Training Range, Sliven, Bulgaria in September 2009 among U.S. and Bulgarian military personnel stationed at the combined military installation. Findings were presented at the NATO RTO System Analysis and Studies (SAS) Research Symposium (SAS-081/RSY) on "Analytical Support to Defence Transformation" in Sofia, Bulgaria on 26 – 28 April 2010 (see Annex G).

1.4 STRUCTURE OF THE REPORT

In Chapter 2, we provide a summary of the results from focus group discussions and subsequent interviews with participation of experts knowledgeable of coalition operations in general and specifically operational HQs. Barriers and enablers to effective performance, associated recommendations, and basic characteristics of effective coalition HQs are presented. Based on the analysis of the results from SMEs discussions, we identified the main (official) goals of the NATO HQs as that of supporting the troops on the ground and executing effective command and control functions. In order to achieve these overarching goals, NATO HQs must implement the following operative goals:

a) Effective and timely sharing of information;

b) Quick and timely decision making; and

c) Improved shared awareness of tasks and responsibilities.

Given these goals as sacrosanct to NATO HQs, our research team defines organisational effectiveness of NATO HQs as the degree of fit, or alignment, among various dimensions of organisational effectiveness such as organisational structure, processes, people, and culture towards goal achievement.

In Chapter 3, we present and discuss theoretical approaches and existing models on organisational effectiveness. We describe and examine five different models – the internal system approach to organisational effectiveness, the Command Team Effectiveness (CTEF) Model [28], the Star Model [30], the 7-S-Model [58] and the Behavioural Engineering Model (BEM; [33]). We evaluate their conceptual ideas and advantages for the purposes of our research, and based on that, we create a new theoretical model to study organisational effectiveness of coalition HQs.

Chapter 4 presents the operational procedures and measurement model. In addition, our research methodology is discussed, to include the instrument for organisational assessment survey, the interview protocol, and data collection procedures.

Chapter 5 summarises the results from the organisational assessment survey in KFOR HQ.

Chapter 6 presents the results from the interviews with key personnel in KFOR HQ.

Finally, Chapter 7 discusses the project implementation and summarises some practical implications as well as the need of future research.

The Annexes present:

- Annex A and Annex B – Transcript of the results from SMEs group discussions;

- Annex C – Research paper presented at NATO RTO System Analysis and Studies (SAS) research symposium on "Analytical Support to Defence Transformation" in Sofia, Bulgaria on 26 – 28 April 2010;
- Annex D and Annex E – Organisational survey questionnaire and interview protocol for semi-structured interviews with key personnel in KFOR HQ;
- Annex F – The report presented to KFOR Commander; and
- Annex G – The report from the Bulgarian-United States RTO supported project "Factors that Influence Coalition teamwork", presented at NATO SAS-081/RSY in Sofia, Bulgaria on 26 – 28 April 2010.

1.5 AUTHORSHIP

Chapter 1: Yantsislav Yanakiev, Tibor Szvircsev Tresch, and Janet Sutton.

Chapter 2: Yantsislav Yanakiev, Fred Lichacz, and Carol Paris.

Chapter 3: Esther Bisig, Tineke Hof, Sigmund Valaker, Tibor Szvircsev Tresch, Stefan Seiler, and Anne Lise Bjørnstad.

Chapter 4: Ann-Renee Blais, Magdalena Granåsen, Esther Bisig, Anne Lise Bjørnstad, Tineke Hof, Fred Lichacz, Jenny Marklund, Joseph Lyons, Erin A. Moeser-Whittle, Sigmund Valaker, and Yantsislav Yanakiev.

Chapter 5: Ann-Renee Blais, Joseph Lyons, Anne-Lise Bjørnstad, and Erin A. Moeser-Whittle.

Chapter 6: Esther Bisig, Magdalena Granåsen, Sigmund Valaker, and Jenny Marklund.

Chapter 7: Sigmund Valaker, Anne-Renee Blais, Magdalena Granåsen, Anne Lise Bjørnstad, Fred Lichacz, Yantsislav Yanakiev, Izik Cohen, Delphine Resteigne, and Esther Bisig.

Chapter 2 – RESULTS OF SUBJECT-MATTER EXPERT FOCUS GROUP DISCUSSIONS

by

Y. Yanakiev, F. Lichacz and C. Paris

2.1 BACKGROUND

As part of its regular meetings in October 2008 and June 2009, the NATO HFM-163 RTG team organised two focus group discussions with Subject-Matter Experts (SMEs) from the NATO School in Oberammergau, Germany, and from the NATO Allied Command Transformation (ACT) in Norfolk, Virginia, USA, respectfully.

The goal of these group discussions with the SMEs was three-fold:

1) To help define the term "organisational effectiveness" of NATO coalition operations;
2) To identify barriers to organisational effectiveness within NATO HQs at the operational level; and
3) To offer some suggestions for improving organisational effectiveness within multi-national NATO HQs.

2.2 METHODOLOGICAL APPROACH

The primary leading criteria for the selection of the SMEs to participate in the focus group discussions were:

1) Commissioned officers from diverse national background; and
2) Officers with extensive experience in multi-national NATO operations.

The SME group that participated at the NATO School in Oberammergau was comprised of commissioned officers from the Netherlands, Spain, UK, and the U.S. who had experience in Provincial Reconstruction Teams in Afghanistan as well as from Joint Forces Command Brunssum, Netherlands, responsible for International Security Assistance Force (ISAF) missions. The group discussion carried out at the NATO ACT was comprised of commissioned officers from the Netherlands, Italy, Spain, UK, and the U.S. (OF-3 to OF-4) who were selected because they all had operational experience with Iraq and Afghanistan missions.

During the group discussions, the SMEs responded to a set of pre-defined questions about their experiences. The questions and the information collected during these interviews were captured and summarized in the meeting minutes and are presented in Annex A and Annex B.

2.3 RESEARCH FINDINGS FROM NATO HFM-163 SME INTERVIEWS

It should be noted that, in the beginning of the discussions, the SMEs did not distinguish clearly between the broader term "operational effectiveness", which represents factors external to an organisation, and the term "organisational effectiveness", which targets internal capabilities of an organisation. As a result, they focused much of their attention on external preconditions for successful cooperation, namely political-military decision making regarding planning and participation in NATO coalition operations that covers operational effectiveness. However, as the interviews progressed, the "confusion" between

operational effectiveness and organisational effectiveness was rectified and the SMEs were able to concur on the characteristics of organisational effectiveness, which will be discussed later.

2.3.1 SMEs' Evaluations Regarding the Factors that Influence Organisational Effectiveness of Coalition Operations

The evaluations of the SMEs regarding the factors influencing organisational effectiveness of coalition operations that act as barriers for successful cooperation were organised within four groups. The first group contains factors, related to *political-military decision making* regarding participation in NATO coalition operations. Among the most frequently mentioned problems are "unclear and unstable goals, changing tasks and lack of common understanding of goals and mission end state" among coalition partners. Additionally, the SMEs' indicated that a "lack of a comprehensive approach to doctrines and concepts" is a major problem concerning organisational effectiveness of coalition operations. Next, the SMEs noted that "different national and NATO education and training systems, along with differing levels of experience in multi-national operations" hinder organisational effectiveness. The SMEs agreed that "there is still a lack of NATO pre-deployment training". Moreover, a traditional barrier to organisational effectiveness of coalition operations is the capabilities and technological gaps as well as "lack of adequate resources allocated to implement the mission" among the coalition partners. Among many other important challenges the "lack of technological interoperability" in national systems hampers information sharing and creates difficulties for cooperation among the different troop-contributing Nations in the coalition. Last in this group, the SMEs consider "nation-centric politics, related to imposing restrictive caveats to employ the troops during the operation" as a major negative influence on coalition operation's effectiveness. The problem is that "the troops are forced to work around these political barriers, which at times increases the immediate risk to the people on the ground and undermines the trust among coalition partners".

The second group of factors is related to *process management* in the organisation, with emphasis on NATO HQ. Among the most frequently discussed factors were "different rotation timeframes among national positions in the HQ and the lack of synchronisation of national rotations". In this regard, the SMEs concur that "different rotation cycles hurt organisational effectiveness" because it creates difficulties in the adaptation among the national representatives and development of social networks. In addition, some of the SMEs identified "rapid turnover of leadership and personnel" as a hindrance to the learning process. Some of the SMEs consider "the tour length too short (typically 4 – 6 months)" noting that "learning and the development of social networks take a long time to develop and by the time these things are established the coalition partners are getting ready to come home". Conversely, some of the SMEs mentioned that "most of Nations prefer comparatively short periods of rotation because the high intensity of the operations contributes to high stress levels for the military personnel". Obviously, this is a problem which deserves particular attention and additional study. Another important barrier to organisational effectiveness according to the SMEs is the "lack of organisational knowledge because lessons learned are not systematically passed on". This is related to the organisation of the process of the handing-over of positions in the HQ and the willingness of the representatives from different Nations to share information with their successors. From a national point of view the SMEs consider this to be problematic that "there is no debriefing for many personnel returning from a NATO assignment". A third and particularly important barrier to effectiveness of coalition HQs according to the SMEs is related to a "lack of communication and poor information sharing process". The problems here are multi-dimensional, both technological and human in nature. Some of the typical explanations are "people not wanting to share information, lack of social networking opportunities, lack of info sharing systems, and lack of understanding of team members' information needs".

The third group of identified factors affecting organisational effectiveness is related to the *people* in the organisation. One of the most important barriers, according to the SMEs is the "lack of adequate manning". The SMEs shared the opinion that "frequently, individuals are not qualified for their assigned

role" and that "some Nations never contribute, but merely ride out their time". This situation generates problems with respect to reasonable distribution of tasks and responsibilities among coalition partners as well as the development of internal social networks in the HQ. A second factor identified as a hindrance to organisational effectiveness is the "lack of cultural awareness training" of the personnel, participating in NATO multi-national operations and the development of intercultural competences. Directly related to this factor is the problem with "the quality of English language communication". The problem is certainly multi-faceted. On the one hand, "non-native English speakers often do not comprehend the meaning or context of English speech". On the other hand, "native English speakers also have difficulties with non-native speakers and therefore, sometime assume incompetence on the part of non-native English speakers. Moreover, there is the basic problem with the use of NATO abbreviations and so-called "NATO slang", which adds to linguistic confusion across the various languages in the NATO HQ.

Finally, the fourth group comprises factors that are related to the influence of cultural differences on organisational effectiveness and the process of formation of unique organisational cultures within the NATO HQ. The SMEs view the organisational culture of a NATO HQ as a mixture of different national military and service cultures that affects the organisational effectiveness of the HQ. A particular example of this is "the different mental models of coping with uncertainty and the process of overcoming uncertainty", which is related to culturally based biases in the need for information to make a decision. This process may affect the unwillingness to make a decision if the person needs more information or cause the fear of making an incorrect decision, both of which can undermine organisational effectiveness of the HQ. Another essential factor is "the effect of different leadership styles" (for example: direct vs. indirect) which can lead to misunderstandings or misperceptions of the intention of the leader. The SMEs were unanimous about the role of the leadership as a factor that shapes the organisational culture in the HQ and thus influences effectiveness of coalition operations. The role of the leader and specific leadership capabilities in a multi-national environment are critical factors regarding the establishment of shared vision and shared awareness with respect to goals and tasks. In this regard, the SMEs recommend that the "leader be committed to the mission, not to the Nation". Another factor which deserves attention, also influenced by different national cultures, is "task orientation vs. the need to spend time building and maintaining relationships". A final factor in this group that the SMEs identified as a potential problem is the "lack of individual, organisational, and national trust". The issue of trust among coalition partners deserves particular attention because it is related to information sharing and the coalition operations' effectiveness as a whole.

2.3.2 SMEs' Evaluations Regarding the Enablers of Organisational Effectiveness of Coalition Operations

What are the primary enablers of organisational effectiveness according to the SMEs? According to the SMEs, these enablers are focused on process improvement in the HQ and on strategic decision-making when a NATO operation is planned and implemented.

The first group of factors that the SMEs identified as enablers of organisational effectiveness of coalition operations is related to the introduction of process improvement strategies in NATO HQs (see Table 2-1).

Table 2-1: Basic Characteristics of an Effective Coalition HQ.

Political-Military Decision Making	Internal Process Management	People	Cultural Differences
• Able to achieve its goals • Establishes priorities	• Learning organisation • Facilitates information sharing • Willing to adapt its structures to the ever-changing conditions where necessary • Implements process improvement strategies implementation to facilitate information sharing, social networking and Commander's commitment to achieving HQ goals • Makes efficient use of the available resources	• Able to take initiative • Leaders make fast and timely decisions • Flexible human resources management system to guarantee high motivation, cohesion, organisational and interpersonal trust	• Openness to diverse cultures; develop intercultural competencies • Use common language and terminology • Use common formats/ standardization of different procedures • Use common doctrine and concepts

The SMEs were unanimous in their view that information sharing is an enabler of organisational effectiveness within a coalition HQ. In order to improve information sharing within the HQ, the SMEs indicated the need for a strategy for changing people's minds and attitudes of "reluctance to share information" and to provide full-spectrum technical interoperability among coalition partners. Another important enabler of organisational effectiveness in coalition operations cited by the SMEs is related to the development of the HQs as a learning organisation. The SMEs suggest "introducing Standing Operating Procedures (SOPs) for the transition of positions in the HQs in order to avoid gaps of handover" and to transfer lessons learned. In addition, the SMEs considered the introduction of an "effective mentoring program to support handover procedure so you don't start from scratch every time" and to "learn from the mistakes" of the predecessors as an important way of achieving this goal. Furthermore, the SMEs considered the "process of social networking" and the development of "informal networks" as a key factor for successful task accomplishment. In this regard, the SMEs suggested the organisation of "ad hoc meetings in open environments within multi-cultural settings", as well as to "create the opportunity for people to talk to each other informally" through ice-breakers/social events or the use of the officer's club for social networking. Moreover, the SMEs rated among the most important factors that influence coalition HQs' effectiveness is "an unreserved commitment from the senior leadership in the HQs". They agreed that "the HQs will be effective only if the leader is not there to serve his/her Nation but rather to serve the goals of the HQs". Having in mind the complex character of current NATO operations, SMEs identified the need to have "leaders who make decisions to be able to prioritise conflicting items".

The second group of factors put forth by the SMEs relates to the improvement of strategic decision-making processes for planning and implementing a NATO coalition operation. Among the most discussed factors was the need to introduce "NATO standardisation for education and training for coalition operations". The SMEs postulated that the "HQ staff has to have prior experience working together as a

group". Moreover, they considered "pre-deployment training on how to work in NATO/coalition environment as a necessity". Finally, the SMEs deemed the "elimination of national political caveats for mission execution" is a priority task because "such caveats challenge trust among Nations".

The third group of factors discussed by the SMEs is in respect to those structural factors that influence coalition operational effectiveness and focused on the format of cooperation (lead Nation – framework Nation – multi-national formation). The SMEs gave priority to multi-national cooperation which is characterized by the statement "no single Nation has to be predominantly represented on the HQ staff".

Finally, the fourth group of factors focused on organisational culture as a factor for successful coalition cooperation. The SMEs suggestions were aimed at the improvement of cross-cultural education and training, and building intercultural competencies among the NATO HQ staff. As well, the SMEs considered the development of "NATO HQ culture, pushing for development of NATO identity, and to be more NATO-oriented than Nation-oriented" as a priority factor for achieving this aim.

2.4 CONCLUSIONS

The SMEs defined organisational effectiveness as *the ability of an organisation, in our case coalition HQs, to achieve its goals.* They described an effective HQ as an organisation which:

- Facilitates information sharing;
- Is able to make fast and timely decisions;
- Establishes a common understanding of its tasks and responsibilities;
- Is adaptable to change and can adjust quickly to changing situations;
- Is able to go beyond task description and taking initiative;
- Is able to learn from mistakes; and
- Is open to diverse cultures.

In summary, the feedback from the SMEs who volunteered to support the HFM-163 interviews contributed significantly to our understanding of NATO HQs organisational effectiveness and toward HFM-163's recommendations for improving the organisational effectiveness of NATO's culturally diverse teams. The SMEs stated that the main goal of NATO HQs is to support the troops on the ground. In order to achieve this goal, NATO HQs should implement the following primary operative goals:

a) Effective and timely sharing of information;

b) Quick and timely decision making; and

c) Improved shared awareness of tasks and responsibilities.

Following this approach, NATO HFM-163 established a working definition of organisational effectiveness of NATO HQs as the degree of fit or alignment among various dimensions of organisational effectiveness such as organisational structure, processes, people, and culture towards goal achievement.

Chapter 3 – THEORETICAL FRAMEWORK AND MODEL

by

E. Bisig, T. Hof, S. Valaker, T. Szvircsev Tresch,
S. Seiler and A.L. Bjørnstad

In this chapter we present five theoretical models and approaches of organisational effectiveness:

- The Command Team Effectiveness (CTEF) Model [28];
- The Star Model [30];
- The 7-S-Model [58];
- The Behavioural Engineering Model (BEM) [33]; and
- The internal system approach to organisational effectiveness [44].

Following the presentations of these theoretical model and approaches, we elaborate upon their conceptual ideas and advantages for our purposes and, present a model tailored to a NATO coalition HQ.

3.1 REVIEW OF ORGANISATIONAL EFFECTIVENESS MODELS

We reviewed all well-established organisational effectiveness models. In the following sub-chapter, however, we describe and discuss only those we believe are most relevant to study the organisational effectiveness of a NATO coalition operation's HQ.

3.1.1 Command Team Effectiveness Model

The Command Team Effectiveness (CTEF) Model (see Figure 3-1) of Essens et al. (2005) offers the possibility to observe, evaluate, and promote group activities. This model assumes successful leaders understand and take into account the following factors:

a) The conditions that determine how effective the team can be under the given circumstances. (e.g., operation framework, task, organisation, leader, team members, team);

b) The behaviour and processes occurring during the operation (i.e., the model distinguishes between behaviour/processes related to tasks and those related to groups);

c) The results of these behaviours and processes (again distinguishing between those related to tasks and to groups); and

d) As a result of After Action Reviews (AAR) the adoption of processes and conditions in order to become more effective.

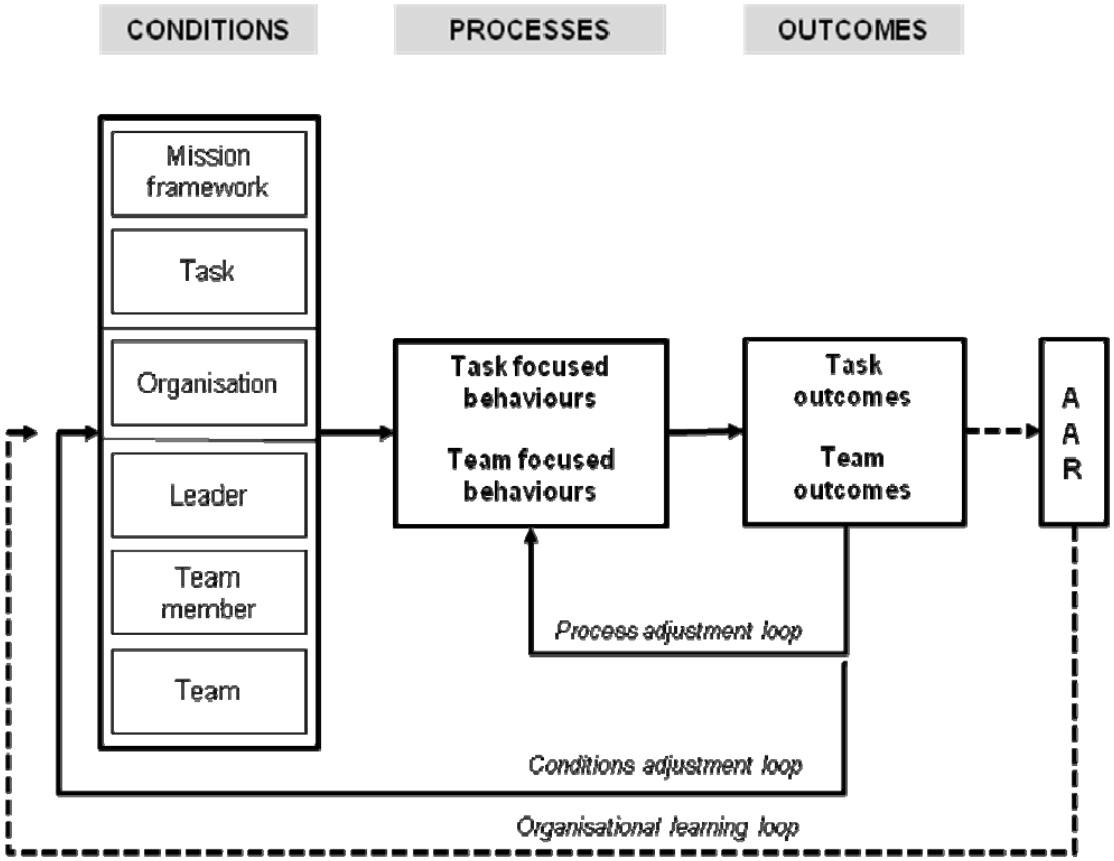

Figure 3-1: CTEF Model [28].

A Task Group of NATO RTO developed this model, using existing models as an inspiration to identify its components [25],[63],[46],[16]. Moreover, the group consulted articles and chapters on organisational effectiveness and conducted interviews with subject-matter experts.

The primary advantage of this model is its strong theoretical foundation, which includes learning and adjustment loops and the impact of mission framework and context on behaviour. However, in regard to multi-national operations, this model lacks the (inter-)cultural aspects. Additionally, it focuses extensively on team and task characteristics, which does not correspond to a HQ's perspective. On the HQ level, there are other emphases and vulnerabilities (e.g., organisational culture and structure). Another weakness of the CTEF model is the complex cause-and-effect structure, which in practice can only be partially verified.

3.1.2 The Star Model

The basic premise of the Star Model (see Figure 3-2) of Galbraith (2002) is simple but powerful: different strategies require different organisations to execute them. The Star Model framework for organisational design is the foundation on which an organisation bases its design choices. This framework consists of a series of design policies that are controllable by leadership and can influence employee behaviour. The policies are the tools with which leaders must become skilled in order to shape the decisions and behaviours of their organisations effectively. In the Star Model, design policies fall into five categories:

a) Strategy;

b) Structure;

c) Processes;

d) Rewards; and

e) People.

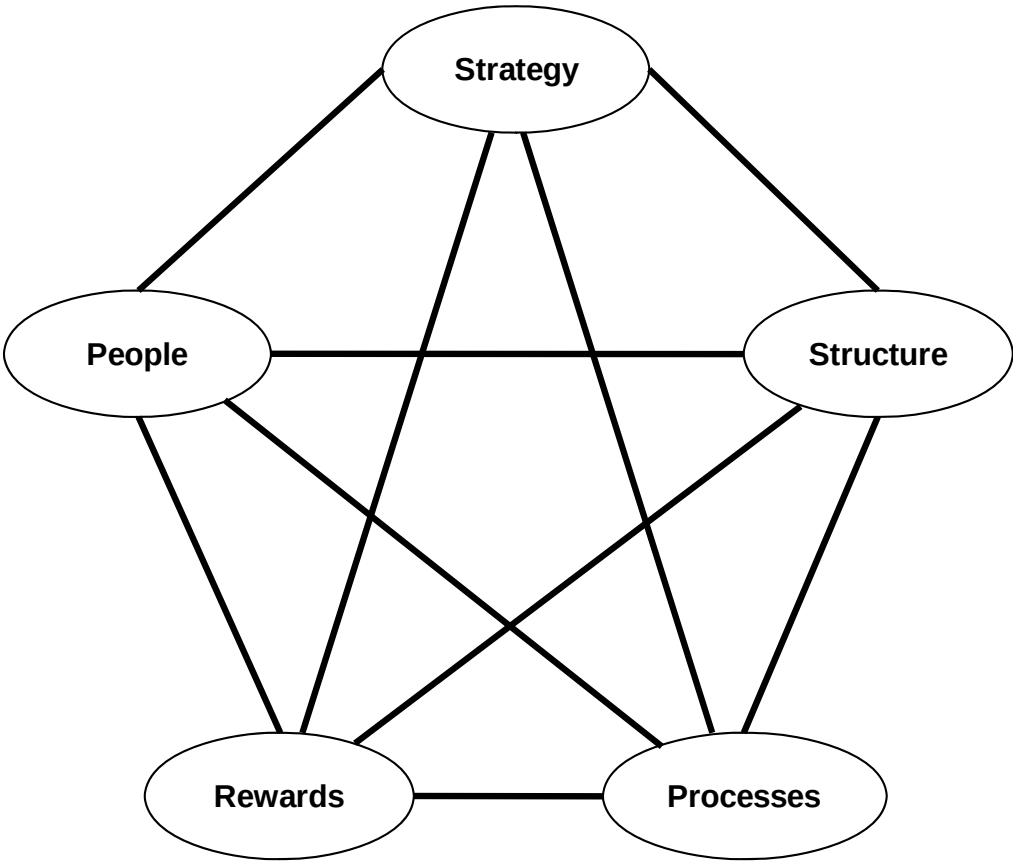

Figure 3-2: Star Model [30].

In order to for an organisation to be effective, all these policies must be aligned, interacting harmoniously with one another. This idea of alignment is fundamental to the Star Model. The notion of alignment is central to the Star Model in that organizational effectiveness is driven to the extent to which the structure, processes, reward systems, and ultimately the culture support the strategy of the organisation. While the Star Model offers practical litmus test for organizational effectiveness, it may be too simple a model to deal with the complexities associated with a NATO HQ where requirements and goals may shift dynamically as situations unfold globally. Today, every organisation needs to be adaptive and able to change as quickly as its context. Short of that, it runs the risk of falling behind. Thus structures and processes have to be easily reconfigurable and realigned, which asks for the skilled use of extensive internal and external networking capabilities [30].

One advantage of this model lies in its consideration of the concept of strategic alignment, which ensures goal-oriented work and therefore, organisational effectiveness. Another advantage of the model resides in the notion of adaptability to a constantly changing environment. Nevertheless, despite the advantages, the Star Model is not tailored to the organisation of a NATO HQ, but rather to business and market-oriented companies. Other weak points are that effectiveness is not a direct output of the design policies, and that culture is only understood as an output and not as an input factor in the model. But in a multi-national HQ, where people from different Nations are working together, culture should probably also be seen as an input variable.

3.1.3 The 7-S-Model

The 7-S-Model of Peters and Waterman Jr. (1982) [58] divides organisations into “hard” and “soft” factors. The hard factors refer to those concrete elements of an organisation documented with policy papers, plans and documentation on the development of the organisation; they are:

a) Strategy;

b) Structure; and

c) Systems.

The soft factors allude to those elements of an organisation that are hard to describe and control, because they are highly dependent on the members of the organisation; they are:

a) Skills;

b) Staff;

c) Style/culture; and

d) Shared values / super ordinate goals (see Figure 3-3).

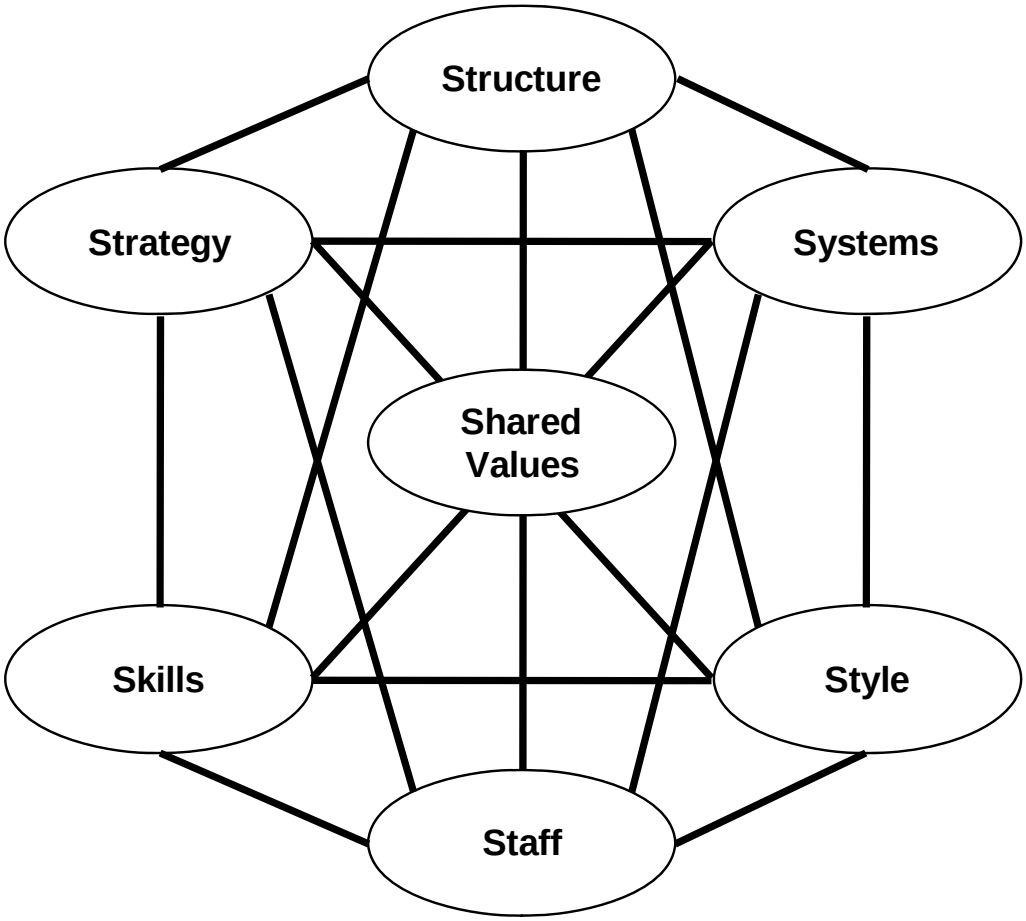

Figure 3-3: 7-S-Model [58].

While the hard factors are easier to evaluate, the assessment of the soft factors proves to be much more difficult, even though they are at least as important for the organisation as are the hard ones.

Effectively functioning organisations are characterized by a coordinated balance of theses seven factors. In times of change and adjustment, the modification of one factor impacts on the other factors. A well-functioning organisation must aspire to find the right balance between the above introduced factors. In practice, it is often the case, however, that leaders only focus on the hard factors. Peters and Waterman Jr. (1982) [58] argue that the most successful organisations devote their attention to the optimum balance amongst the soft factors, which can be decisive for success because new structures and strategies can barely be built on completely opposed cultures and values.

This praxis proven model has the advantage that it:

a) Takes into consideration hard as well as soft factors; and

b) Emphasizes the importance of a balance amongst those factors.

However, as this model is designed as a management tool, it lacks in a comprehensive theoretical foundation.

3.1.4 Behavioural Engineering Model

The Behavioural Engineering Model (BEM) developed by Gilbert ([32],[33]; see Table 3-1) provides a way to systematically and systemically identify barriers to individual and organisational performance. This model distinguishes between a person's repertory of behaviours (i.e., what the individual brings to the performance equation) and the environmental supports (i.e., the work environment factors that encourage or impede performance).

Table 3-1: Behavioural Engineering Model [32],[33].

	Information	**Instrumentation**	**Motivation**
Environmental supports	***Data*** 1. Relevant and frequent feedback about the adequacy of performance 2. Description of what is expected of performance 3. Clear and relevant guides to adequate performance	***Resources*** 1. Tools, resources, time and materials of work designed to match performance needs	***Incentives*** 1. Adequate financial incentives made contingent upon performance 2. Non-monetary incentives made available 3. Career-development opportunities 4. Clear consequences for poor performance
Person's repertory	***Knowledge*** 1. Systematically designed training that matches the requirements of exemplary performance 2. Placement	***Capacity*** 1. Flexible scheduling of performance to match peak capacity 2. Prosthesis or visual aids 3. Adaptation 4. Selection	***Motives*** 1. Assessment of people's motives to work 2. Recruitment of people to match the realities of situation

Researchers in industry and military alike have found that approximately 80% of performance problems can be attributed to organisational/environmental issues such as manpower, systems, and processes.

In other words, organisational issues are more likely to present a barrier to effective human performance than individual-focused issues, such as knowledge for example. The reason for this is that individuals are better able to do what is expected of them when the environmental supports are strong; or, in the words of Rummler and Brache (1995, p. 13) [62], "If you pit a good performer against a bad system, the system will win almost every time".

Gilbert's BEM offers a valuable tool for analysing performance deficits. Its distinction between individual and environmental input factors may be particularly pertinent to a new model tailored to coalition HQs as strong environmental support is the starting point for enabling individuals to effectively accomplish their tasks. However, the relationship between the environmental support factors and the person's repertory of behaviour is not clearly defined by Gilbert.

3.1.5 Internal System Approach to Organisational Effectiveness

There are several approaches to measure organisational effectiveness, of which each considers different characteristics of an effective organization:

a) Ability to secure, manage and control scarce and valued skills and resources (external resource approach);

b) Ability to be innovative and function quickly and responsively (internal systems approach); and

c) Ability to convert skills and resources into goods and services efficiently (technical approach; [23]).

To investigate NATO HQ's organizational effectiveness, we limit the analysis to the internal systems approach.

The internal system approach to organisational effectiveness examines the organisation's functioning based on features that are internal to the organisation. Effectiveness is assessed by indicators of internal conditions and efficiency, such as efficient use of resources and harmonious coordination between departments. To assess how well the organisation is performing, management generates goals that they can use for the assessment. Jones (2004) [44] describes two types of goals that can be used to evaluate organisational effectiveness including official goals and operative goals. *Official goals* are the organisation's guiding principles that are usually formally stated in its annual report and in other public documents. Typically these goals describe the mission of the organisation, notably, why the organisation exists and what it should be doing. In our current context, the official goals of the coalition HQs are to implement Non-Article 5 crisis response operations and to provide effective Command and Control (C2) to the troops on the ground. The official goal legitimizes the organisation and its activities. Official goals, however, are not always the most readily assessable nor do they reflect entirely, the internal effectiveness of an organization as they may be driven by external forces as well. *Operative goals*, on the other hand, are specific long- and short-term goals that put management and employees on the right track as they perform the work of the organisation. Management can use operative goals, such as reduce decision-making time, increase the motivation of employees, or reduce conflict between organisation members, to evaluate organisational effectiveness [44].

3.2 DESCRIPTION OF THE MODEL FOR THE ASSESSMENT OF ORGANISATIONAL EFFECTIVENESS OF NATO HQs

The above approaches and models have different foci and cover different aspects of organisational effectiveness. The aim of this paper is to combine the aspects that are most relevant and applicable to the effectiveness of coalition HQs in order to develop a new, tailored model.

Based upon the input of the Subject-Matter Experts (SMEs) and our review of the literature, we agreed upon a definition of organisational effectiveness in NATO HQs as the degree of fit, or alignment, among various dimensions of organisational effectiveness such as organisational structure, processes, people and culture towards the achievement of a main goal. In addition, the input of the SMEs led us to the conclusion that the main (official) goal of a NATO HQ is to support the troops on the ground. Furthermore, we decided to evaluate the organisational effectiveness of NATO HQs by assessing the following operative goals:

a) Effective and timely sharing of information;

b) Effective and timely decision making; and

c) Improved shared awareness of tasks and responsibilities.

A new model for the organisational effectiveness of Non-Article 5 crisis response operations' HQs should include/provide:

- An assessment of the internal effectiveness of the organisation;
- A distinction between operative and official goals;
- A three-step design with a direct link from the input factors through the operative goals to the official goal of the organisation;
- The concept of strategic alignment which states that the input factors must be in optimum balance to result in effective goal achievement;
- A consideration of hard as well as soft, and environmental as well as individual input factors; and
- A simple model, easily applicable in practice.

Effective organisations ensure their operative and official goals are aligned both in terms of their fit with the external environment and in terms of their fit with other factors internal to the organisation. In the paragraph below, we will describe the NATO HQs' internal factors that we believe need to be aligned with its operative and official goals as well as with each other. We selected these factors from the reviewed models and from the SMEs' experience with organisational effectiveness in coalition HQs.

As per our research definition, the official goal of NATO HQs is to provide effective Command and Control (C2) to its troops on the ground. Operative goals that support achieving the official goal are:

a) Increasing effective and timely information sharing;

b) Increasing effective and timely decision making; and

c) Improving shared awareness of tasks and responsibilities.

Previous research on organisational effectiveness has revealed that structure, people, processes, and culture must be aligned towards these operative goals in order for the main goal to be reached effectively [59]. Thus, NATO HQs have to make sure that the decisions made with respect to the NATO HQs' structure, processes, people, and culture support the accomplishment of the operative goals. Figure 3-4 shows this hypothesized process. These direct effects from the input factors on the operative goals form the main focus of the subsequent discussion.

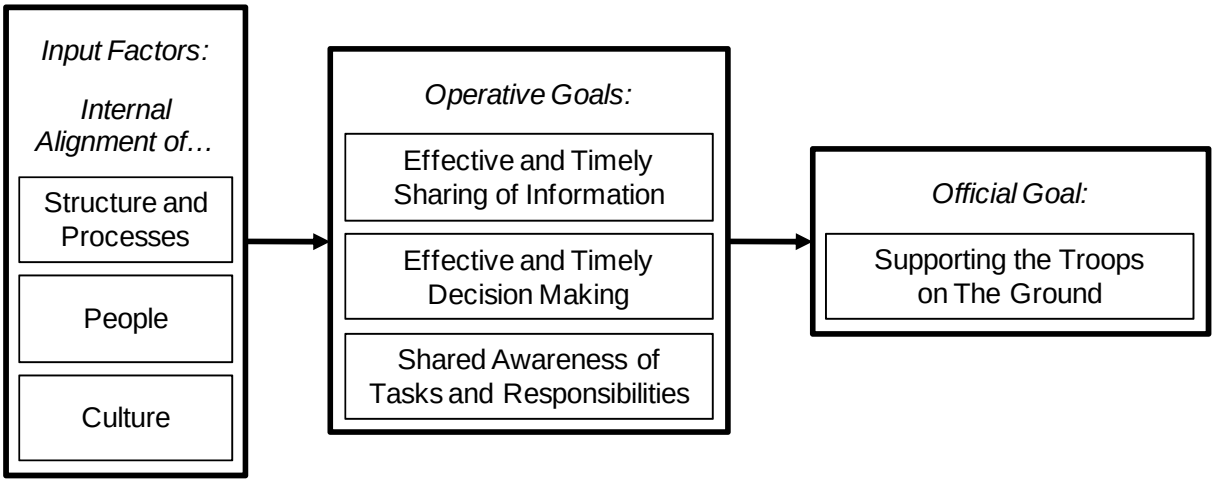

Figure 3-4: Model of Organisational Effectiveness of Non-Article 5 Crisis Response Operations' HQs.

3.2.1 Operative Goals

First, we describe each of the three operative goals in more detail.

3.2.1.1 Effective and Timely Sharing of Information

One operative goal of an effective HQ is effective and timely information sharing. Managing information is the HQ's way of handling information or knowledge. A HQ's effectiveness is tied to its ability to acquire missing information and manage the available information. Three features of information sharing are important:

a) Obtaining;

b) Processing; and

c) Exchanging information [28].

3.2.1.2 Effective and Timely Decision Making

Decision making includes:

a) Identifying or creating multiple options;

b) Choosing among alternatives by integrating the differing perspectives and opinions of team members;

c) Implementing optimal solutions; and

d) Monitoring the consequences of these solutions.

The effectiveness of a HQ's decisions lies in its quality, timeliness and efficiency [28].

3.2.1.3 Shared Awareness of Tasks and Responsibilities

Maintaining a shared awareness of tasks and responsibilities operates to preserve a common picture of the tasks and responsibilities in a HQ. Unless the HQ can ensure a clear, accurate, and common understanding of those duties, its organisational effectiveness may be compromised.

3.2.2 Input Factors

In the following paragraphs, we describe the three factors that we believe should be internally aligned in order to support reaching the operative goals.

3.2.2.1 Structure and Processes

Organisational structure is the formal system of task and authority relationships that control how people coordinate their actions and use resources to achieve organisational goals [44]. It shapes the behaviour of people and that of the organisation. Organisational processes refer to the way the organisation implements its objectives in the framework of the given organisational structure [58]. As such, processes cut across the organisation's structure; "if structure is thought of as the anatomy of the organization, processes are its physiology or functioning (Galbraith 2011 [31])".

3.2.2.1.1 Alignment between Structure and Processes

When implementing changes to achieve a more efficient organization, ensuring an intra-organizational alignment between structures and processes may be essential. Organizational changes are at the very heart of NATO's current goal of implementing NATO Network Enabled Capabilities (NNEC) [8]. The concept of a network organisation represents a change from the traditional bureaucratic type of organisation towards flatter, more decentralised and flexible organisations [2],[4],[5],[55],[67]. This makes it essential to understand how alignment, or misalignment, between structures and processes affects the information sharing, decision making, and situation awareness of the organisation.

There is a tendency in the organizational literature to view hierarchical structures and centralised processes, and on the flip side, flat structures and decentralized processes, as if they were one and the same thing [17],[55]. Misalignment of structures and processes is often a problem in organisations, making such generalisations is problematic. For instance, if the structure changes from hierarchic to flat, while the decision-making authority is not distributed from the top end of the hierarchy, but is centralized at the top, the decision-making load on the top management is likely to become too heavy and render the organization inefficient, unable to reach the necessary decisions especially within the time available in time-sensitive and critical situations [78].

We aimed to test how the alignment between the input factors, structure and processes, predict the attainment of the operative goals in a NATO HQ. Our main hypothesis is that structure needs to be aligned with processes, so that when the structure is flat, then processes should be decentralized, in order for the organization to successfully reach their operative goals of effective and timely information sharing, decision-making, and shared awareness of tasks and responsibilities.

3.2.2.1.2 Alignment of Structure and Processes with the Operative Goals

The environmental circumstances in which military forces has to operate are changing. Therefore, it is necessary to implement organisational changes, such as NATO NNEC. The military needs to transform to an organisation that supports agility, flexibility, jointness and interoperability. An organisational design that fits the transformed military organisation is the network organisation design. A network organisation is an organic organisational structure. Jones (2004) [44] summarizes important aspects of organic structures: Organisations with an organic organisational structure are *decentralized*. They have an organisational set up whereby the authority to make important decisions reside at all levels in the hierarchy. An organic structure stimulates *flexibility*, so that employees can innovate and quickly adapt to changing circumstances, and take responsibility as they make decisions when necessary. *Roles are loosely defined*; organisational members with different functions work together to solve problems and are involved in each other's activities. A high level of integration is needed to enable organisational members

to share information quickly and easily. Rules and norms emerge from the ongoing interaction between organisational members. Interaction between organisational members is horizontal as well as vertical.

Moreover, flexibility is a central part of the processes factor to research when exploring the organizational antecedents of operational effectiveness. Indeed, both in the military and non-military organisational literature, authors have often suggested flexibility as the key capability of today's organizations in order to successfully meet the new challenges of high velocity and fast changing environments [2],[5],[27],[80]. This is not a new idea, for at least three decades researchers have suggested flexibility as the critical factor for organizational excellence [6],[48],[67],[80]. Hence, we expect flexibility to have positive effects on the operative goals in the current work.

Accordingly, for NATO HQs to be able to attain their three operative goals (i.e., increasing effective and timely sharing of information and decision making, and improving shared awareness of tasks and responsibilities) its organisational structure and processes must be organic. The greater the degree to which the NATO HQ's organisational structure and processes resemble those of an organic organisation, the more likely these factors will support attaining the operative goals.

3.2.2.1.3 Alignment with Other Input Factors in Order to Achieve an Operative Effect

These structure and process factors are also closely linked to the people and culture factors. As far as the people factor is concerned, how leadership is executed is closely tied to whether or not structures are flat and processes are decentralized. We expect the ability to deal with rotation cycles to be related to the flexibility of the organization. Culture needs to be aligned with the structure and process factors as well, in order for the organization to function properly. For instance, even if structure and processes are aligned in terms of flat hierarchy and decentralized processes, the operative goals may not be reached unless there also is a culture of autonomy. Likewise, the cultural aspect of improvement orientation, together with a flat hierarchy and decentralised processes, may need to be aligned with flexibility in order to have a positive affect on the operative goals.

3.2.2.2 People

The element "people" is central to the effectiveness of an organisation, and a key factor in many effectiveness models [30],[58],[28]. Following upon the experts' feedback, we concentrate on the sub-factors leadership, rotation and training.

3.2.2.2.1 Leadership

The SMEs indicated that the effectiveness of HQs is mostly a matter of the style of leadership. In numerous studies [10], Bass and Avoilo have examined the impact of leadership style on effectiveness. In their work published in 1994, they stated that, in a transformational style of leadership, the leader enhances the motivation, morale, and performance of his followers through focusing on "transforming" them to help and look out for each other, to be encouraging and harmonious, and to look out for the organisation as a whole. Regarding effectiveness, the results of Bass and Avolio's studies showed:

- Transformational leaders create greater alignment around strategic visions and missions.
- Scores on transformational leadership predict individual and group performance.
- Transformational leadership training improves leadership and its associated performance overtime.
- Transformational leadership explains between 45% and 60% of organizational performance.
- Transformational leaders foster greater unit cohesion, commitment, and lower turnover.
- Transformational leaders promote safer work environments.

Transformational leadership can be described with four "I's:"

a) Idealized influence (Attributes and Behaviours);

b) Inspirational motivation;

c) Intellectual motivation; and

d) Individualized consideration.

Idealized Influence – Transformational leaders behave in ways that result in being a role model for their followers. Their followers admire, respect, and trust them. Among the things the leader does to earn this credit is considering the needs of others over his or her personal needs. He or she shares risks with followers and is consistent rather than arbitrary. Followers can count on him or her to do the right thing, and demonstrate high standards of ethical and moral conduct.

Inspirational Motivation – Transformational leaders behave in ways that motivate and inspire those around them by providing meaning and challenge to their followers' work. Team spirit arises and enthusiasm and optimism are displayed. The leader creates clearly communicated expectations that followers want to meet. Also, the leader demonstrates commitment to goals and shared vision.

Intellectual Stimulation – Transformational leaders stimulate their followers' effort to be innovative and creative by questioning assumptions, reframing problems, and approaching old situations in new ways. They encourage creativity and do not publically criticize individual members' mistakes.

Individualized Consideration – Transformational leaders pay special attention to each individual's need for achievement and growth by acting as coach and mentor. They encourage followers and colleagues to successively attain higher levels of potential.

As NATO HQ includes people from different Nations, the multi-national aspect of leadership is crucial. If leaders interact with subordinates from the same cultural background, they tend to agree with respect to leadership objectives, authority, responsibilities, possible course of action, etc. In short, the subordinates tend to agree with the leader's role as well as with their role assignments. In such cases, the interactions normally are successful and mutually satisfying. However, if the leader and subordinates originate from different cultural backgrounds, discrepant concepts of leading and following collide [49]. Yet, research on transformational leadership shows that within the framework of this leadership style there is no need for cultural congruence. A comparative study [11] showed that transformational leadership was the (perceived) ideal leadership style not only in the U.S., but also in such diverse countries/cultures as India, Japan, Canada, the Netherlands, and Singapore, and performs better than other leadership styles in terms of success.

Thus, for the NATO HQ to be able to reach its three operative goals, its leadership must be transformational. That is, the greater the degree to which the NATO HQ's organisational leadership resembles transformational leadership, the more likely it will be able to achieve its operative goals.

3.2.2.2.2 Training

Training is another key contributor to organisational effectiveness. The lack of attendance in NATO pre-deployment training pertaining to working in coalition operations can be an important barrier to organisational effectiveness in NATO HQs. Without training, individuals show a lack of competencies (e.g., situational awareness, cultural awareness), do not know each other, and have not had the chance to clarify their roles and expertise before starting to work together. We are interested in whether or not pre-deployment training affects individuals' knowledge, skills, and other behaviours, namely information sharing, decision making, and shared awareness of tasks and responsibilities. Training is most likely to

have a significant impact on such outcomes when delivered within a job-specific and skills-focused context. A very important aspect of NATO pre-deployment training is the process of team-building, as teams in multi-national HQs are typically characterized by high heterogeneity.

Overall, research on diversity and heterogeneity of teams and their effectiveness has led to inconsistent results (cp. literature reviews in: [43],[65],[81]). While some authors have discovered better solutions and performance with increasing diversity, because heterogeneous teams possess richer perspectives and greater potential [76],[83],[54], others have demonstrated worst integration and dissatisfaction with increasing cultural diversity, which in turn negatively impacts the team's effectiveness [42],[57],[82]. Thus, heterogeneity seems to influence team effectiveness through multiple, simultaneous factors [3],[26],[41], which can be either performance enhancing (e.g., diversity and creativity of generated solutions) or reducing (e.g., low cohesion). It is, therefore, extremely important that pre-deployment training promotes team cohesion so that the innovative and creative potential of its heterogeneity can be exploited. Future team members normally know which task they will be performing (i.e., functional dimension) and where they will be located in the HQ's hierarchy (i.e., hierarchical dimension) during deployment. However, they cannot position themselves within the team or organisation (i.e., central vs. peripheral position) until deployment [40]. Without integration, they cannot embrace the interpersonal activity that leads to collective strength and shared awareness, thus the participation of each member is crucial and should be encouraged as early as during pre-deployment training [9]. At that point, future team members develop shared perceptions, attitudes, and values leading to shared interpretations and understanding. Thereby, potential misunderstandings in the daily cooperation are reduced [77]. The more heterogeneous a team is, the longer its members need to develop a joint approach and communication routines (see [51]).

We believe that for NATO HQs to be able to attain its operative goals, staffs' active participation in NATO pre-deployment training is necessary. The greater the personnel's participation in NATO pre-deployment, the more likely it will be for the HQ to reach its operative goals.

3.2.2.2.3 Rotation Practices

As already noted by the SMEs, the rotation practices in NATO HQs can be a central barrier to organisational effectiveness. They mentioned different aspects of the rotation practices such as no handover/ mentoring programme, gaps of transition, difference or shortness of tour length, and national rotations that lack synchronization. Studies on personnel rotation revealed possible causes for negative impacts of rotation on performance. Hartman, Stoner, and Arora (1992) [36] showed the newcomers need to acquire skills and knowledge concerning structure, equipment, and processes after each rotation. In addition, feelings of isolation, frustration, and deprivation of a group identity [35] or difficulties in adopting new social structures and rules [24],[73] can occur among new members of the NATO HQ. Such challenges can result in lower organisational effectiveness.

Therefore, we believe that for a NATO HQ to be able to attain its operative goals the rotation practices of the contributing Nations must be coordinated and a comprehensive handover must be assured. The greater the degree to which the rotation practice achieves these issues, the more likely it will be for the NATO HQ to reach its operative goals.

3.2.2.3 Culture

Culture encompasses both organizational and national culture. Both aspects could be important in a NATO HQ, but we focus primarily on organizational culture as this aspect specifically addresses the values and work practices of a NATO HQ. Organizational culture concerns shared values regarding the practices within the NATO HQ that could be instrumental to achieve the operational goals and take advantage of the other input factors, whereas national culture concerns national values.

Organisational culture is formed by the set of values and norms that influence its organisational members' interactions with each other and with people outside the organisation [44]. An organisation's culture can be used to increase organisational effectiveness [66], because it influences the way members make decisions, understand and deal with the organisation's environment, what they do with information, and how they behave [19]. Organizational culture concerns values and norms that one holds about actual work practices [12].

What are the organisational values concerning practices and how do they influence organisational members' behaviour? Values are criteria that people use to establish which types of behaviour are desirable or undesirable [44]. Two kinds of values can be distinguished (see Figure 3-5), terminal and instrumental values. Terminal values represent outcomes that people and the organisation want to achieve, such as excellence, reliability, innovativeness, stability, and predictability. Instrumental values, on the other hand, are desired modes of behaviour, such as working hard, being creative and courageous, being conservative and cautious, taking risks, and maintaining high standards. Team members who *trust* each other are better able to examine, improve team processes, and self-manage their own performance [29],[34]. Besides, employees report that the absence of trust interferes with the effective functioning of work teams [50]. Costa (2003) [22] has examined the relation of trust with team performance and stated that high trust in teams indicates a high perception of task performance. Therefore, trust is an important condition for the effective functioning of teams in organisations.

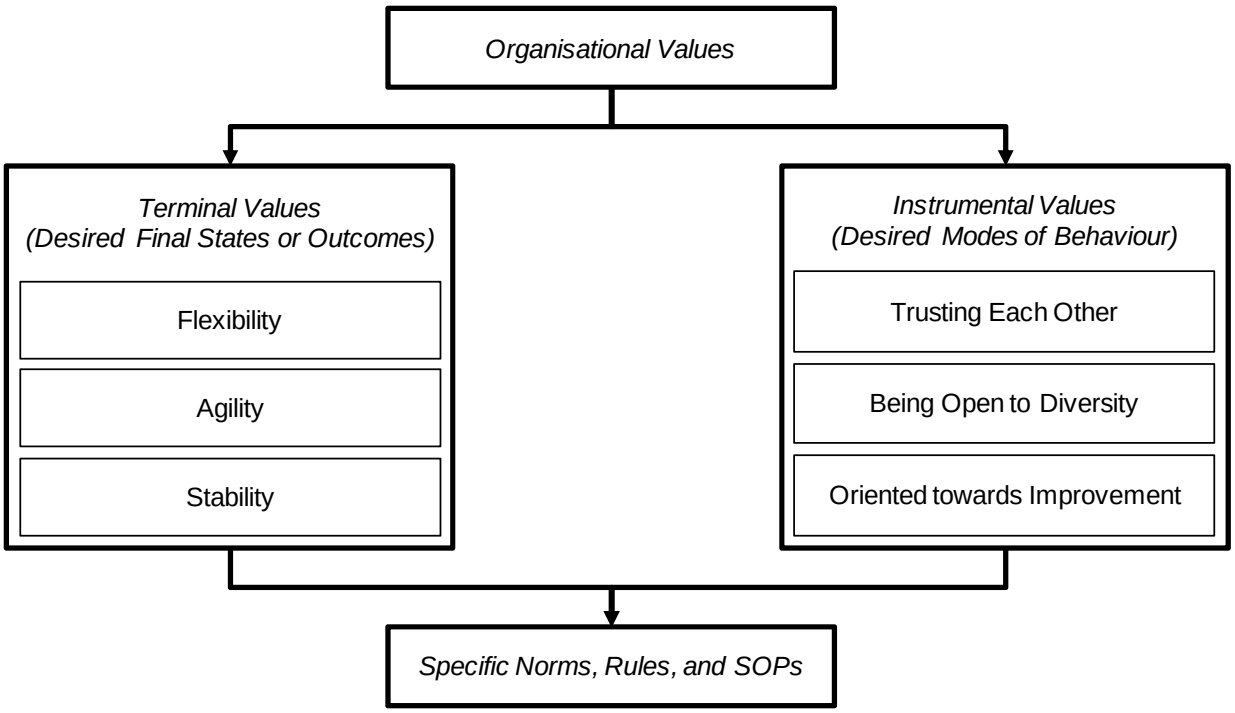

Figure 3-5: Terminal and Instrumental Values in a NATO HQs' Organisation.

NATO HQs' members show high diversity in national backgrounds and expertise. High diversity within teams and organisations can cause integration problems, low cohesion, and dissatisfaction, which in turn can affect the team's effectiveness negatively [42],[82]. An organisational culture that promotes being *open to diversity* stimulates team cohesion and allows the innovative and creative potential of the heterogeneity to be exploited. In organisations valuing an *improvement-oriented culture*, members demonstrate a high level of proactivity in trying to improve work, processes, and routines. This can lead to improved collaboration between different departments and an increased emphasize on efficient

cooperation among employees. Specifically in this respect, being open to and able to manage national cultural differences constructively should be important.

Hence, an organisation's culture consists of the end states that the organisation wants to accomplish (i.e., its terminal values) and the modes of behaviour that the organisation supports (i.e., its instrumental values). The NATO HQ's mission statement and official goals, that is, supporting the troops on the ground by agility and flexibility of the processes and stability of the organisational structure, should be reflected in the terminal values it adopts. Also, for the NATO HQ staff to understand and be able to act in accordance with the instrumental values, the NATO HQ should develop specific norms, rules, and standard operating procedures that typify its specific instrumental values.

We believe that for NATO HQs to be able to attain its operative goals, its terminal cultural values must reflect flexibility and agility in its processes, yet, stability in the organisational structure, and its instrumental cultural values should include trusting each other, being open to diversity, and having an improvement orientation. The larger the degree to which the NATO HQs has developed these cultural values, the more it will support attaining the operative goals.

Although, not our main focus, there is one national cultural difference that may be especially pertinent to our current hypotheses. Power distance (Pd) is defined as "the extent to which the less powerful members of institutions and organizations within a country expect and accept power to be distributed unequally" [37]. Cultural differences in Pd influences whether or not people from different countries are used to and prefer to work in more hierarchic and centralized types of organizations or whether or not they, conversely, are used to and prefer to work in flatter and more decentralized types of organizations [37],[38]. This suggests that Pd may moderate the proposed relationships between a flatter structure and greater decentralization in processes (i.e., the organic organization variables) and flexibility and the operative goals variables. More specifically, we may find the hypothesized relationships in low Pd cultures only.

3.3 HYPOTHESES[1]

We expect the input factors (i.e. structure and processes, people, and culture) to be significant predictors of the operative goals (i.e., effective and timely decision making, information sharing, and shared awareness of tasks and responsibilities). More specifically, we hypothesize a flatter organizational structure and greater decentralization in processes will predict more effective and timely decision making, information sharing, and increased shared awareness of tasks and responsibilities). Pd was expected to moderate the same relationships. Moreover, the moderator hypotheses indicated that the flat structure-flexibility, operative goals, decentralized processes-flexibility, and operative goals relationships would depend on the structure and processes variables being well aligned and Pd being low. We expect greater flexibility and differentiation in processes to predict more effective and timely decision making, information sharing, and greater shared awareness of tasks/responsibilities. We also hypothesize that greater levels of transformational leadership, training, and rotation effectiveness will be related to more effective and timely decision making, information sharing, and greater shared awareness of tasks/ responsibilities as will a greater improvement orientation and a greater openness to diversity.

We anticipate team trust will moderate the relationship between hierarchy and decentralization in processes and the operative goals. That is, under conditions of low team trust, we expect a flatter organizational structure and greater decentralization in processes to be related to less effective and timely decision making, information sharing, and decreased shared awareness of tasks/responsibilities. Under conditions of high team trust, we expect a flatter hierarchical structure and greater decentralization in processes to be related to more effective and timely decision making, information sharing, and greater shared awareness of tasks/responsibilities.

[1] A detailed list of hypotheses is included in Appendix 3.1.

Appendix 3.1: LIST OF HYPOTHESES

H1: Degree of hierarchy will negatively predict the operative goals.

H1a: Degree of hierarchy will negatively predict shared awareness.

H1b: Degree of hierarchy will negatively predict decision making effectiveness.

H1c: Degree of hierarchy will negatively predict information sharing.

H2: Degree of centralization will negatively predict the operative goals.

H2a: Degree of centralization will negatively predict shared awareness.

H2b: Degree of centralization will negatively predict decision making effectiveness.

H2c: Degree of centralization will negatively predict information sharing.

H3: Flexibility will positively predict the operative goals.

H3a: Flexibility will positively predict shared awareness.

H3b: Flexibility will positively predict decision making effectiveness.

H3c: Flexibility will positively predict information sharing.

H4: Differentiation will positively predict the operative goals.

H4a: Differentiation will positively predict shared awareness.

H4b: Differentiation will positively predict decision making effectiveness.

H4c: Differentiation will positively predict information sharing.

H5: Perceptions of leadership will positively predict the operative goals.

H5a: Perceptions of leadership will positively predict shared awareness.

H5b: Perceptions of leadership will positively predict decision making effectiveness.

H5c: Perceptions of leadership will positively predict information sharing.

H6: Perceptions of pre-deployment training will positively predict the operative goals.

H6a: Perceptions of pre-deployment training will positively predict shared awareness.

H6b: Perceptions of pre-deployment training will positively predict decision making effectiveness.

H6c: Perceptions of pre-deployment training will positively predict information sharing.

H7: Perceptions of rotation practices will positively predict the operative goals.

H7a: Perceptions of rotation practices will positively predict shared awareness.

H7b: Perceptions of rotation practices will positively predict decision making effectiveness.

H7c: Perceptions of rotation practices will positively predict information sharing.

H8: Improvement orientation will positively predict the operative goals.

H8a: Improvement orientation will positively predict shared awareness.

H8b: Improvement orientation will positively predict decision making effectiveness.

H8c: Improvement orientation will positively predict information sharing.

H9: Openness to diversity will positively predict the operative goals.

H9a: Openness to diversity will positively predict shared awareness.

H9b: Openness to diversity will positively predict decision making effectiveness.

H9c: Openness to diversity will positively predict information sharing.

H10: Trust will moderate the relationship between the structural input factors and the operative goals.

H10a: Trust will moderate the relationship between degree of hierarchy and shared awareness.

H10b: Trust will moderate the relationship between degree of hierarchy and decision making effectiveness.

H10c: Trust will moderate the relationship between degree of hierarchy and information sharing.

H10d: Trust will moderate the relationship between degree of centralization and shared awareness.

H10e: Trust will moderate the relationship between degree of centralization and decision making effectiveness.

H10f: Trust will moderate the relationship between degree of centralization and information sharing.

H10g: Trust will moderate the relationship between flexibility and shared awareness.

H10h: Trust will moderate the relationship between flexibility and decision making effectiveness.

H10i: Trust will moderate the relationship between flexibility and information sharing.

Chapter 4 – METHOD

by

A.R. Blais, M. Granånsen, E. Bisig, A.L. Bjørnstad, T. Hof, F. Lichacz, J.J. Lyons, E.A. Moser-Whittle, S. Valaker and Y. Yanakiev

4.1 MATERIALS

This study employed a combination of quantitative (i.e., questionnaire) and qualitative (i.e., semi-structured interviews) methodologies as described below.

4.1.1 Questionnaire

This section of the report outlines the questionnaire (see Annex D) built on the basis of the above introduced model of organisational effectiveness of NATO operational HQ implementing Non-Article 5 Crisis Response Operations. Note that, except for the background variables and when otherwise noted, the participants rated their level of agreement with the items on 5-point Likert-type rating scales ranging from *Strongly Disagree* to *Strongly Agree*. A sixth option, labelled *I don't know*, was also available for their consideration.

4.1.1.1 Background Variables

Background variables (Items 1 – 12) included sex, age, nationality, first language, status (military including Army, Air Force, Navy, and Marine, or civilian including government employee or contractor), rank (if military), number of deployments in a multi-national HQ, length of stay in the HQ, and supervisory role (and if so, number of subordinates).

4.1.1.2 Operative Goals

Four items (Items 62 – 65), derived from the U.S. Surface Warfare Officers' School's (SWOS) Team Assessment Instrument [74], assessed effective and timely *decision making* within the HQ. Five items (Items 57 – 61), also adapted from the SWOS, measured effective and timely *sharing of information* within the organization, and six items assessed *shared awareness of tasks and responsibilities* within the HQ. Of these six items, four (Items 30 – 32 and 55) were adapted from Lewis (2003) [52] and two (Items 54 and 56) from Matthews, Strater and Endsley (2004) [53].

4.1.1.3 Structure and Processes

Four items (Items 13 and 15 – 17) measured the *flatness* of the organization's structural hierarchy, while three items (Items 14 and 18 – 19) assessed its degree of *decentralization* in processes. Four items (Items 20 – 23) measured its *flexibility*, and five items (Items 24 – 28), its level of *differentiation*.

An additional variable, *alignment*, was created to estimate the level of congruence between the flatness of the organizational structure and the decentralization in its processes by subtracting the decentralization variable from the flatness variable. Thus, high scores (in absolute values) indicate low congruence (i.e., opposite ratings on the two variables, e.g., 1 and 5) and low scores (in absolute values), high congruence (i.e., identical scores on the two variables, e.g., 1 and 1).

Items 13 and 14 and the alignment variable are based on the work of Bjørnstad (2005, 2011) [14],[13]. The rest of the items were developed specifically for this study.

4.1.1.4 People

Ten items including items 69 – 78, [61] evaluated the level of transformational *leadership* within the HQ. Those participants who answered *Yes* to Items 37 "I took part in NATO [e.g., multi-national] pre-deployment training prior to joining this HQ" and/or item 38 "I took part in national pre-deployment training prior to joining this HQ" were asked to rate five additional items (Items 39 – 43). These five ad-hoc items pertained to the perceived effectiveness of their *pre-deployment training* in preparing them for their work in the HQ. Three ad-hoc items (Items 44 – 46) assessed the perceived efficiency of the *rotation cycles* in the HQ.

4.1.1.5 Culture

Four items (Items 33 – 36), three of which originate from the work of Blais and Thompson (2009) [15], assessed the notion of team *trust* within the HQ; the fourth item was simply an overall indicator of trust. Four items including items 47 – 50 [75] tapped into the *improvement orientation* in the HQ, while three ad-hoc items, including items 51 – 53, measured the *openness to diversity* in the HQ. Based upon the information available regarding the participants' nationalities, Hofstede's country index scores on power distance (Pd) were employed in the analyses [37],[38]. Note that Pd was not a direct measure; scores were adapted from previous research.

4.1.2 Interviews

The interview protocol was designed based on the model of organizational effectiveness of NATO operational HQ implementing Non-Article 5 Crisis Response Operations. It included background questions similar to those asked in the questionnaire, questions pertaining to the input factors, and questions tapping into each of the operative goals.

For each input factor, the SMEs were asked to describe the HQ with respect to that factor. For instance "Do you perceive the HQ to be flexible or rigid?" Furthermore they were asked how this circumstance (e.g., degree of flexibility) affected their daily work and, when applicable, asked about what aspects were affecting this circumstance, including the question, "What are the most critical aspects affecting flexibility in the HQ?" As far as the operative goals were concerned, the views of the SMEs on how decision making, information sharing, shared awareness worked in the HQ, and critical aspects affecting these goals, were assessed.

Because the interviews were designed to be semi-structured in nature, the follow-up-questions were not mandatory. They were dependent upon the answers of the interviewees. For the complete interview protocol, please see Annex E.

4.2 PARTICIPANTS AND PROCEDURE

The October 10–15, 2010 data collection team from NATO HFM RTG-163 carried out the field study in KFOR HQ, Pristine, Kosovo. The following researchers participated in the field work: CAPT Yantsislav Yanakiev (BGR-N) D.Sc., Ms. Esther Bisig, Ms. Jenny Marklund, Mr. Sigmund Valaker and Dr. Maria-Magdalena Granåsen.

Data collection was organised in six sessions in which groups of approximately 25 respondents where scheduled to meet the research team in the conference facility (Hollywood Centre) in Film City. The chair of NATO HFM RTG-163 introduced the multi-national research team and the goals of the study. He also informed the participants that the survey was completely anonymous and that their participation was entirely voluntary. Each session lasted between 30 and 45 minutes.

4.2.1 Questionnaire

Data were collected from 103 military members and 33 civilian KFOR HQ personnel, including 5 government civilians and 28 civilian contractors. The following analysis focuses on the sub-sample of 103 military personnel from NATO and Partnership for Peace (PfP) nationalities represented in KFOR HQ. The socio-demographic composition of the military sub-sample was as follows (see Table 4-1).

Table 4-1: Socio-Demographics of Respondents.

Sex:	Male = 95 Female = 7 NA = 1
Age:	Average = 40.3 years
Nationality:	USA = 19, DEU = 15, TUR = 14, ITA = 11, HUN = 6, UK = 5, IRE = 5, AUS = 5, ROU = 5, SLV = 5, FRA = 4, SWE = 4, GRC = 3, POL = 3, BGR, BEL = 2, POR, SPA, UKR, CZE, EST, FIN, NOR = 1
Military service:	Army = 76 Air Force = 14 Navy = 10 Marines = 1 NA = 2
Military rank	Commissioned Officers (COs): OF-1 = 3 OF-2 = 13 OF-3 = 21 OF-4 = 19 OF-5 = 4 Non-Commissioned Officers (NCOs): OR-5 = 4 OR-6 = 8 OR-7 = 7 OR-8 = 7 OR-9 = 6 NA = 11
Number of multi-national deployments:	First deployment = 53; of the remaining 50 who had been deployed before, the majority (= 36) were deployed once or twice.
Length of current deployment so far:	Average = 5.91 months
Supervisory role:	Supervisory role = 55, supervising on average 8.92 subordinates

The respondents were selected based on the following criteria:

1) Representation of diverse nationalities;
2) Representation of different organisational structures within KFOR HQ; and
3) Representation of different hierarchical levels and military ranks.

As a result, the implemented sample covers respondents from 24 NATO and PfP nationalities. In addition, the following HQ branches are represented in the sample: J1, J2, J3/Joint Operations Cell (JOC), J4/JEng, J5/Joint Coordination and CIMIC (JEC), J6, J8, Public Affairs Office (PAO), Headquarters Support Group

(HSG), Military Civil Advisory Division (MCA), Joint Intelligence Cell (JIC), DOS, Media Advisor (MEDAD) and Legal Advisor LEGAD. Finally, 60 Commissioned Officers (COs) ranging from OF-1 to OF-5 and 32 Non-Commissioned Officers (NCOs) OR-5 – OR-9 were surveyed, while 11 respondents did not show their military rank.

4.2.2 Interviews

Fifteen interviews were conducted mainly at the Assistant Chief of Staff (ACOS) level, covering J1 – J5, J8, Headquarters Support Group (HSG), different structures of the MCA, and JIC. All interviewees were military officers (i.e., Colonel or Lt Colonel) except two. Representatives of 10 NATO and PfP nationalities participated in the interviews (DEU = 4, TUR = 1, ITA = 2, UK = 1, IRE = 1, SLV = 2, FRA = 1, GRC = 1, FIN = 2).

Each interview lasted approximately 45 to 60 minutes. The interviewees were interviewed individually by two members of NATO RTO HFM-163. One of these members asked the interview questions, while the other member recorded the interview and asked additional questions if needed. All interviews except one were audio-recorded. Before the interview started, the participants were informed that their participation in the interview was completely voluntary, that their anonymity would be protected, and they were asked for their permission to be audio-recorded.

4.3 DATA ANALYSIS PLAN

4.3.1 Questionnaire

After preparing and screening the data, we examined each scale to establish acceptable levels of internal consistency reliability by conducting internal consistency reliability analyses. A Cronbach's alpha of .70 or higher was considered acceptable for psychological research [21],[56]. In order to reach this objective, we removed those items that failed to show a sizable correlation (.30 in the expected direction; [56]) with the corrected total-scale score (i.e., the total score except for the item of interest), as they did not distinguish between low and high scorers on the scale. We aimed to retain at least three items per scale, however, in order to make it possible for future research to investigate the psychometric properties of the items via exploratory factor analyses [79]. Next, we computed the means and standard deviations associated with each scale as well as the correlations among the scales.

Then, to inform our hypothesis that the operative goals were related to the input factors, we conducted separate hierarchical regression analyses with each of the three operative goals as the outcome variable. To see whether or not each set of input factors (i.e., structure and processes, people, and culture variables) uniquely contributed to the outcome variable, we regressed the three sets of predictor variables onto the outcome variable sequentially, starting with the structure and processes variables, followed by the people variables, and the culture variables.

Finally, we ran moderated regression analyses [7] to determine whether or not team trust moderates the relationship between the structure and processes variables and the operative goals. Specifically, we examined team trust as a potential moderator of the relationship between the flatness of the organizational structure, the decentralization in its processes, its flexibility, its differentiation, and effective and timely decision making, information sharing, shared awareness, and the perceived effectiveness of the organization. First, we mean-centred the predictor variables to reduce multi-collinearity and created interaction terms by multiplying the mean-centred flatness (in structure), decentralization (in processes), flexibility, and differentiation variables with the mean-centred team trust variable [1]. Then we conducted separate regression analyses for each of the structure and processes variables predicting each of the operative goals in turn. For example, when predicting shared awareness, we entered flatness in hierarchy, team trust,

and their interaction in the model. A significant interaction coefficient should indicate that team trust is indeed a moderator of the relationship between the predictor and outcome variables. We plotted significant interactions to ascertain their nature and run tests of simple slopes. We used this procedure to test the remaining moderation hypotheses.

Chapter 5 – RESULTS

by

A.R. Blais, J. Lyons, A.L. Bjornstad and E.A. Moeser-Whittle

5.1 DATA PREPARATION AND SCREENING

The analyses were conducted on the military data only; the civilian participants had been in the HQ for a significantly greater number of months (N = 33, M = 57.06, SD = 34.69) than had been the military participants (N = 103, M = 5.92, SD = 7.29), $t(32.94) = 8.41$, $p < .001$, and hence were excluded from further analyses.[1]

There were a minimal number of missing observations (.53% of the data) and "I don't know" responses (3.96% of the data). Expectation Maximization (EM) estimation was used to impute these data [18]. A few univariate outlying data points (i.e., .26% of the data; $z > |3.29|$, $p < .001$, two-tailed; [72]) were also converted to the next most extreme rating, a common remedial measure in dealing with outliers [47]. The univariate normality of the variables was assessed by looking for skewness and kurtosis values greater than |2| and |7|, respectively [84]. None of the values fell above these cut-offs, suggesting normality was tenable.

5.2 INTERNAL CONSISTENCY RELIABILITY ANALYSES

5.2.1 Operative Goals

All four decision-making items were retained to form the decision-making scale, resulting into an internal consistency reliability estimate (i.e., Cronbach's alpha) of .81. The items' ratings were averaged, and greater scores suggest more effective and timely decision making within the HQs. With respect to information sharing, item 57 had a corrected item-total correlation of .25, so it was deleted from the analyses and only the remaining four items were kept to form the information-sharing scale (α = .75). Greater scores indicate more effective and timely sharing of information within the organization. Items 29, 31, and 32 were reverse-scored to form the seven-item shared-awareness scale (α = .73); greater scores allude to greater shared awareness of tasks and responsibilities within the HQ.

5.2.2 Structure and Processes

It proved difficult to make sense of the notions of flat structure and decentralised processes. The items that should have reliably measured these concepts did not correlate well with one another, leaving only Items 13 and 14 that were moderately correlated, r = .39, $p < .001$. Averaging their ratings resulted in an "organic" variable (α = .56). Greater scores on this variable are indicative of a greater flatness in hierarchical structure and decentralization in processes. Item 23 was reverse-scored, and a three-item flexibility sub-scale (α = .70) was formed by deleting Item 22, which only had a corrected item-total correlation of .03. Greater scores on this scale are in the direction of greater flexibility of the HQ. Lastly, the differentiation scale only included Items 26 and 27, as the other items correlated poorly with the total scale score. The two retained items were moderately correlated (r = .47, $p < .001$), resulting into an alpha of .64. Greater scores indicate greater differentiation within the organization.

[1] A Welch t was used given that Levene's test of variance homogeneity was significant, $F(1, 131) = 153.59$, $p < .001$. Because the dependent variable (i.e., length of stay in the HQ) was non-normal for the military group (i.e., skew = 4.03 and kurtosis = 19.88; such values are much greater than the cut-off values of |2| and |7|, respectively, suggested by West, Finch and Curran (1995) [84] as indicative of problematic non-normality), a Wilcoxon-Mann-Whitney test was also conducted on the groups' medians, supporting the result associated with the parametric test, $z = 8.25$, $p < .001$.

5.2.3 People

The 10-item transformational leadership scale resulted into an alpha of .94; a greater score is suggestive of a greater level of transformational leadership within the HQ. The 5-item pre-deployment training scale showed an alpha of .88, with a greater score being indicative of a greater effectiveness of pre-deployment training in preparing the participants for their work in the HQ. Items 44 and 45 were reverse-scored, and the 3-item rotation scale had an alpha of .73, with greater scores suggesting greater efficiency of the rotation cycles in the HQ.

5.2.4 Culture

The team trust items formed a 4-item team trust scale (α = .81); greater scores reflect a greater team trust within the HQ. With respect to the improvement orientation scale, Item 47 had a marginal corrected item-total correlation of .32, and its deletion from the analyses resulted into alpha increasing from .77 to .85, so it was excluded from further analyses, and a 3-item improvement-orientation scale was formed, where a greater score alludes to a greater improvement orientation in the HQ. The three items associated with the openness-to-diversity scale resulted into an alpha of .71, with a greater score referring to a greater openness to diversity in the HQ.

5.3 DESCRIPTIVE STATISTICS AND SIMPLE CORRELATIONS

As shown in Figure 5-1, the 103 participants rated the HQ as less organic (i.e., more hierarchical, centralised) in its structure than not, average with respect to its differentiation and rotation practices, and above average on flexibility, leadership effectiveness, team trust, openness to diversity, and improvement orientation. The 73 participants who had taken part in some form of pre-deployment training (i.e., NATO or national) evaluated their training as above average. As Figure 5-2 displays, participants perceived the KFOR HQ as operating with above average decision making, information sharing, and shared awareness.

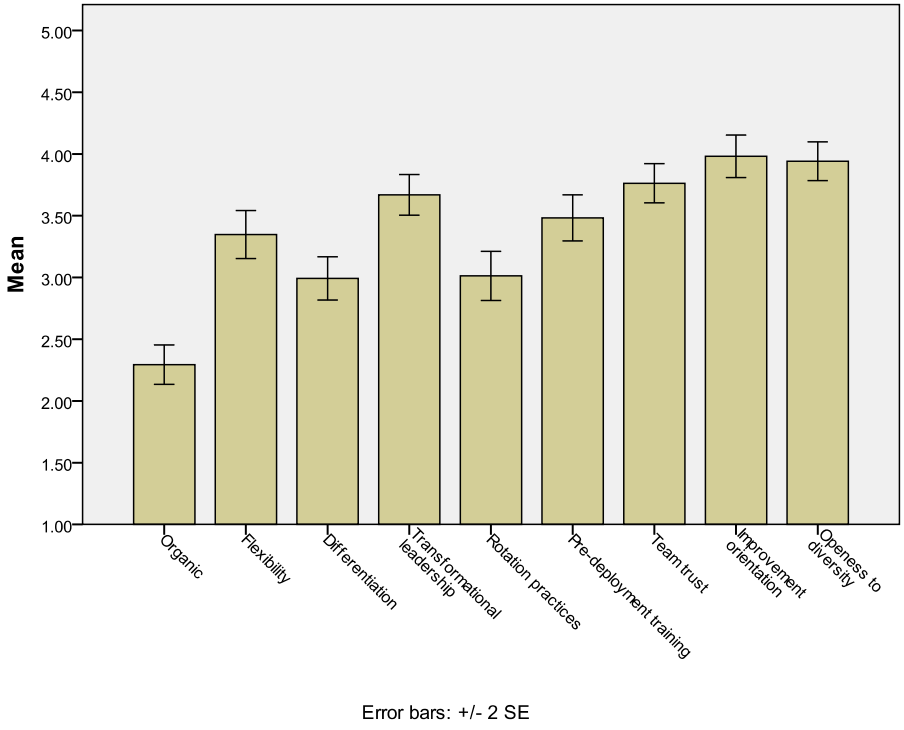

Figure 5-1: Mean Ratings on the Input Factors (*N* = 103).

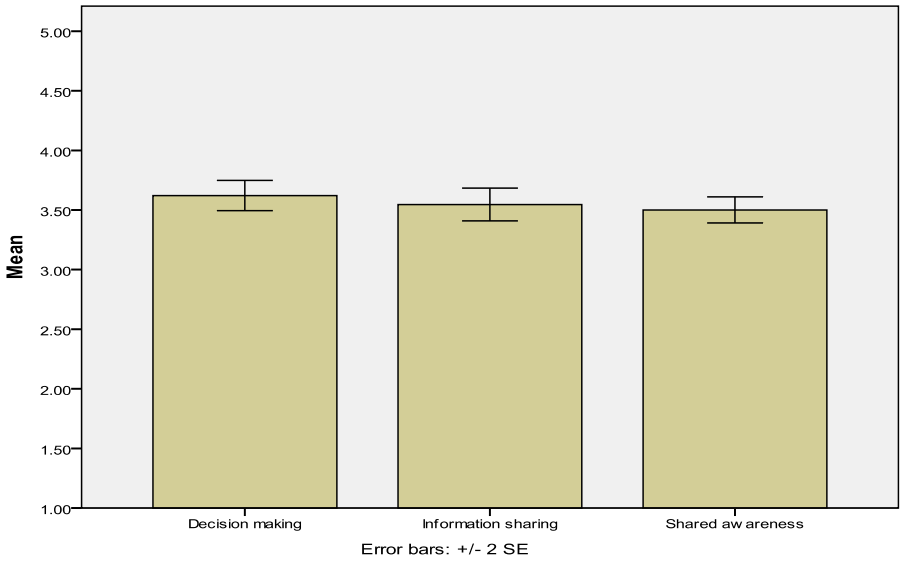

Figure 5-2: Mean Ratings on the Operative Goals (*N* = 103).

Table 5-1 shows the simple correlations among the variables. Of particular interest are the correlations among the structure and processes variables, the people variables, and the culture variables, as well as those among the input factors and operative goals.

Table 5-1: Simple Correlations Among the Input Factors and Operative Goals.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Organic	1.00	-.31	-.15	-.14	-.28	-.27	-.27	-.13	-.18	-.21	-.29	-.35
2. Flexibility	-.31	1.00	.25	.39	.08	.10	.42	.34	.13	.52	.46	.62
3. Differentiation	-.15	.25	1.00	.24	.08	.19	.32	.16	.12	.33	.35	.25
4. Transformational leadership	-.14	.39	.24	1.00	.26	.20	.33	.43	.24	.65	.53	.40
5. Rotation practices	-.28	.08	.08	.26	1.00	.29	.24	.38	.09	.31	.34	.24
6. Pre-deployment training	-.27	.10	.19	.20	.29	1.00	.30	.32	.25	.38	.30	.32
7. Team trust	-.27	.42	.32	.33	.24	.30	1.00	.39	.26	.54	.51	.59
8. Improvement orientation	-.13	.34	.16	.43	.38	.32	.39	1.00	.28	.42	.39	.48
9. Openness to diversity	-.18	.13	.12	.24	.09	.25	.26	.28	1.00	.24	.22	.24
10. Decision making	-.21	.52	.33	.65	.31	.38	.54	.42	.24	1.00	.72	.56
11. Information sharing	-.29	.46	.35	.53	.34	.30	.51	.39	.22	.72	1.00	.52
12. Shared awareness	-.35	.62	.25	.40	.24	.32	.59	.48	.24	.56	.52	1.00

Note. $N = 103$ for all of the variables except pre-deployment training ($N = 73$). Correlations greater than .19 and .23 ($N = 103$ and $N = 73$, respectively)) are statistically significant at $p < .05$.

Surprisingly, the organic variable was not aligned in the expected ways with the flexibility variable: In this HQ, a more organic (i.e., flatter, more decentralised) organization was related to lower flexibility than was a less organic (i.e., more hierarchical, centralised) one, $r = -.31$, $p = .002$. The flexibility and differentiation variables were, as expected, positively correlated, $r = .25$, $p = .012$. The transformational leadership and rotation variables and the rotation and training variables were, as expected, positively correlated ($r = .26$, $p = .009$, $r = .29$, $p = .014$, respectively), as were the team trust, improvement orientation, and openness variables, $r = .39$, $p < .001$, $r = .26$, $p = .008$, and $r = .28$, $p = .005$. The variables assessing the operative goals were, also as expected, positively correlated, $r = .72$, $p < .001$, $r = .56$, $p < .001$, and $r = .52$, $p < .001$.

Beside the unexpected negative relationships between the organic variable and the operative goals, all of the other correlations were in the expected direction with all of the input factors being positively correlated with the operative goals. The coefficients ranged from .22 ($p = .024$; between the openness to diversity and information sharing variables) to .65 ($p < .001$; between the leadership and decision making variables).

5.3.1 Mean Differences Between Training Groups

Thirty-five participants had taken part in NATO pre-deployment training prior to joining the HQ, while 67 had participated in national pre-deployment training. Seventy-three participants had received at least one of these two forms of training prior to joining the HQ, with 29 receiving both. Twenty-eight participants reported not having taken part in either form of training. The mean scores on the input factors and operative goals of the participants who had taken part in either form of training were not significantly different from the mean scores of the participants who had not trained at all.

5.4 HIERARCHICAL REGRESSION ANALYSES: ALIGNMENT OF THE OPERATIVE GOALS AND INPUT FACTORS (FULL SAMPLE)

As planned, separate hierarchical regression analyses were conducted on each of the operative goals in turn, regressing three sets of predictor variables (i.e., the structure and processes, people, and culture variables) on the outcome variable. All of the regression models met the assumptions of regression analysis (see [18]). Multi-collinearity was not an issue in any of the models, based on proposed threshold values of 6 or 7 for the variance inflation factor [18].

5.4.1 Decision Making

The set of structure and processes variables explained 31% of the variance in decision making, $F(3, 99) = 15.13$, $p < .001$. Adding the people variables to the model explained a significant proportion of the variance in decision making above and beyond the structure and processes variables, $F(2, 97) = 24.75$, $p < .001$, $R^2 = .23$. Together, the three culture variables explained an additional 5% of the variance in decision making, $F(3, 94) = 3.52$, $p = .018$.

The final model, including all eight predictor variables, explained 59% of the variance in decision making, $F(8, 94) = 17.04$, $MSE = 0.18$, $p < .001$. It also showed flexibility, transformational leadership, and team trust had significant unique effects on decision making, $b(SE) = 0.18(0.07)$, $t(94) = 2.81$, $p = .006$, $\beta = .23$; $b(SE) = 0.38(0.07)$, $t(94) = 5.47$, $p < .001$, $\beta = .43$; and $b(SE) = 0.24(0.08)$, $t(94) = 3.07$, $p = .003$, $\beta = .25$, respectively. **That is, greater flexibility, transformational leadership, and trust within the HQ were reliable predictors of more effective and timely decision making within the organization.**

5.4.2 Information Sharing

The set of structure and processes variables explained 29% of the variance in information sharing, $F(3, 99) = 13.31$, $p < .001$. Adding the people variables to the model explained a significant proportion of the variance in information sharing above and beyond the structure and processes variables, $F(2, 97) = 13.43$, $p < .001$, $R^2 = .15$. Together, the three culture variables explained an additional 4% of the variance in information sharing, yet this contribution failed to reach statistical significance, $F(3, 94) = 2.45$, $p = .068$.

The final model, including all eight predictor variables, explained 48% of the variance in information sharing, $F(8, 94) = 10.95$, $MSE = 0.27$, $p < .001$. It also showed transformational leadership and team trust had significant unique effects on information sharing, $b(SE) = 0.28(0.08)$, $t(94) = 3.33$, $p = .001$, $\beta = .30$; and $b(SE) = 0.24(0.10)$, $t(94) = 2.52$, $p = .013$, $\beta = .23$, respectively. **In other words, greater transformational leadership and trust within the HQ were significant predictors of more effective and timely sharing of information within the organization.**

5.4.3 Shared Awareness

The set of structure and processes variables explained 42% of the variance in shared awareness, $F(3, 99) = 24.34$, $p < .001$. Adding the people variables to the model explained a significant proportion of

the variance in shared awareness above and beyond the structure and processes variables, $F(2, 97) = 3.37$, $p = .038$, $R^2 = .04$. Together, the three culture variables explained an additional 11% of the variance in shared awareness, $F(3, 94) = 8.19$, $p < .001$.

The final model, including all eight predictor variables, explained 57% of the variance in shared awareness, $F(8, 94) = 15.79$, $MSE = 0.14$, $p < .001$. It also showed flexibility, improvement orientation, and team trust had significant unique effects on shared awareness, $b(SE) = 0.26(0.06)$, $t(94) = 4.54$, $p < .001$, $\beta = .37$; $b(SE) = 0.13(0.06)$, $t(94) = 2.14$, $p = .035$, $\beta = .18$; and $b(SE) = 0.26(0.07)$, $t(94) = 3.74$, $p < .001$, $\beta = .31$, respectively. **That is, greater flexibility, improvement orientation, and trust within the HQ were reliable predictors of increased shared awareness of tasks and responsibilities within the organization.**

5.5 HIERARCHICAL REGRESSION ANALYSES: ALIGNMENT OF THE OPERATIVE GOALS AND INPUT FACTORS (TRAINING SAMPLE)

The following set of results describe the hierarchical regression analyses that were conducted on the reduced sample of participants ($N = 73$) who had taken part in pre-deployment training (i.e., NATO or national) prior to joining the HQ. For the sake of brevity and simplicity, only included are the results that showed, in the final model, a significant effect of the effectiveness of pre-deployment training on the operative goal (i.e., only decision making in this case).

5.5.1 Decision Making

The set of structure and processes variables explained 37% of the variance in effective and timely decision making, $F(3, 69) = 13.20$, $p < .001$. Adding the people variables to the model explained a significant proportion of the variance in decision making above and beyond the structure and processes variables, $F(3, 66) = 12.97$, $p < .001$, $R^2 = .24$. Together, the three culture variables explained an additional 2% of the variance in decision making, yet this contribution failed to reach statistical significance, $F(3, 63) = 1.33$, $p = .273$.

The final model, including all nine predictor variables, explained 62% of the variance in effective and timely decision making, $F(9, 63) = 11.62$, $MSE = 0.18$, $p < .001$. It also showed flexibility and transformational leadership had significant unique effects on decision making, $b(SE) = 0.22(0.08)$, $t(63) = 2.77$, $p = .007$, $\beta = .28$; and $b(SE) = 0.37(0.09)$, $t(63) = 4.29$, $p < .001$, $\beta = .40$, respectively. These findings were in line with those obtained with the full sample. In addition, the final model indicated pre-deployment training was significantly related to decision making, $b(SE) = 0.16(0.07)$, $t(63) = 2.29$, $p = .025$, $\beta = .20$. **That is, greater flexibility and transformational leadership within the HQ were reliable predictors of more efficient and timely decision making within the organization, as was more effective pre-deployment training.**

5.6 MODERATING ANALYSES: TEAM TRUST AS A MODERATOR OF THE RELATIONSHIPS BETWEEN THE STRUCTURE AND PROCESS VARIABLES AND OPERATIVE GOALS

As planned, moderated regression analysis was also used to test whether or not team trust moderated the relationship between the structure and process variables and operative goals.

5.6.1 Decision Making

In contrast to our hypotheses, each of the interactions between the organic, flexibility, and differentiation variables and the team trust variable failed to reach statistical significance when predicting effective and

timely decision making, $b(SE)$ = 0.10(0.13), $t(98)$ = 0.74, p = .461; $b(SE)$ = -0.15(0.10), $t(98)$ = -1.52, p = .132; and $b(SE)$ = -0.02(0.11), $t(99)$ = -0.21, p = .837, respectively. Note that the same multi-variate outlier was deleted from the data due to its excessive overall influence on the regression equation prior to running the former two analyses [18].

5.6.2 Information Sharing

In contrast to our hypotheses, each of the interactions between the organic, flexibility, differentiation variables, and the team trust variable failed to reach statistical significance when predicting effective and timely information sharing, $b(SE)$ = -0.06(0.14), $t(98)$ = -0.45, p = .658; $b(SE)$ = 0.09(0.12), $t(98)$ = 0.79, p = .429; and $b(SE)$ = -0.05(0.12), $t(98)$ = -0.39, p = .696. The same multi-variate outlier was deleted from the data due to its excessive overall influence on the regression equation prior to running the analyses.

5.6.3 Shared Awareness

In contrast to our hypotheses, each of the interactions between the organic, flexibility, and differentiation variables and the team trust variable failed to reach statistical significance when predicting shared awareness of task and responsibilities, $b(SE)$ = 0.02(0.08), $t(99)$ = 0.22, p = .829; $b(SE)$ = 0.02(0.07), $t(99)$ = 0.26, p = .799; and $b(SE)$ = -0.05(0.09), $t(99)$ = -0.58, p = .567, respectively.

5.7 MODERATING ANALYSES: ALIGNMENT AND POWER DISTANCE AS MODERATORS OF THE RELATIONSHIPS BETWEEN THE ORGANIC AND FLEXIBILITY VARIABLES AND BETWEEN THE ORGANIC VARIABLE AND THE OPERATIVE GOALS

Both the Power distance (Pd) and alignment (i.e., between structure and processes) variables were expected to moderate the relationships between the organic and flexibility variables and between the organic variable and the operative goals. Specifically, under low-Pd and high-alignment conditions, positive relationships between the organic and flexibility variables and between the organic variable and the operative goals were expected.

These hypotheses were tested via hierarchical regression analysis. First, regression models using the organic, alignment, and Pd variables as predictors of the dependent variables (i.e., flexibility, information sharing, decision making, and shared awareness) were estimated (Step 1). Next, the interaction terms between the organic and alignment variables and between the organic and Pd variables were included in the models (Step 2 and Step 3, respectively). A significant increase in the amount of explained variance (R^2) after adding the interaction terms to the model indicates an improvement in the fit of the model to the data, and hence, that moderating effects are present. To avoid issues of multi-collinearity and simplify the interpretation of the results, all of the independent variables were mean centred prior to being entered into the regression analyses.

The results are presented in Table 5-2. The moderators (i.e., the alignment and Pd variables) were not significant predictors of the dependent variables, yet the organic variable was a significant negative predictor of all of the dependent variables (in line with the negative correlation coefficients discussed previously). Contrary to our hypotheses, the relationships between the organic and dependent variables were not moderated by the alignment variable or the Pd variable. Thus, these analyses could not explain the unexpected negative relationships between the organic and flexibility variables and between the organic variable and the operative goals.

Table 5-2: Moderating Analyses: Alignment and Power Distance (Pd) as Moderators of the Relationships Between the Organic and Flexibility Variables and between the Organic Variable and the Operative Goals (*N* = 103).

	Step 1 (Main effects)			Step 2 (Interaction 1)	Step 3 (Interaction 2)			
	Organic	Alignment	Pd	Alignment x organic	Pd x organic	R^2	ΔF	$p\ \Delta F$
Flexibility (Step 1)	-.32**	.01	-.02			.10	3.52	.018
(Step 2)	-.32**	-.00	-.03	.02		.10	0.04	.834
(Step 3)	-.30**	.02	.01	-.02	-.19†	.14	3.70	.057
Decision making (Step 1)	-.25*	-.01	-.00			.06	2.01	.109
(Step 2)	-.23*	.05	.01	-.15		.08	1.78	.185
(Step 3)	-.23*	.06	.03	-.16	-.09	.09	.71	.400
Information sharing (Step 1)	-.27**	.11	.09			.11	3.85	.012
(Step 2)	-.25*	.17	.10	-.16		.13	2.32	.131
(Step 3)	-.25*	.18	.12	-.17	-.06	.14	.38	.540
Shared awareness (Step 1)	-.36***	-.07	.08			.14	5.00	.003
(Step 2)	-.37***	-.09	.07	.04		. 14	.18	.675
(Step 3)	-.37***	-.09	.07	.05	.03	.14	.11	.743

Note. All variables lie on 5-point Likert-type rating scales. Greater scores indicate a flatter structure, more decentralised processes, and greater alignment, flexibility, decision making, information sharing, and shared awareness. The regression coefficients are standardized.

$^{\dagger}p < .10$. $*p < .05$. $**p < .01$. $***p < .001$.

Means and standard deviations of the alignment and Pd variables were 48.4 and 18.3, and 4.2 and 0.7, respectively.

Based on the theoretical assumption that structure and processes are separate variables (see Chapter 3), follow-up hierarchical regression analyses were conducted where the organic variable was split into its original components, flat structure and decentralised processes (see Table 5-3). The overall tendency in the relationships between a flat structure and the dependent variables was in the predicted direction (i.e., positive), and a flat structure was a significant positive predictor of effective and timely decision making when both the alignment and Pd variables were included as moderators in the model, $b(SE) = 0.27(0.12)$, $t(94) = 2.19$, $p < .005$, $\beta = .34$. The decentralization variable, on the other hand, had significant negative effects on all the dependent variables.

Table 5-3: Moderating Analyses: Alignment and Power Distance (Pd) as Moderators of the Relationships Between a Flat Structure, Decentralised Processes, and Flexibility and the Operative Goals (*N* = 103).

	Step 1 (Main Effects)				Step 2 (Interaction 1)		Step 3 (Interaction 2)				
	Flat structure	Decentralised processes	Alignment	Pd	Alignment x flat structure	Alignment x decentralised processes	Pd x flat structure	Pd x decentralised processes	R^2	ΔF	p ΔF
Flexibility											
(Step 1)	.10	-.52***	-.18	.00					.18	4.92	.001
(Step 2)	.14	-.58**	-.22	.00	.07	-.01			.18	.15	.865
(Step 3)	.13	-.54**	-.17	.01	.03	-.06	-.25*	.05	.24	3.176	.047
Decision making											
(Step 1)	.11	-.46**	-.20	.02					.13	3.50	.011
(Step 2)	.34	-.77***	-.28	.05	.22	-.32*			.19	3.18	.046
(Step 3)	.34*	-.77***	-.26	.01	.20	-.34*	-.11	.06	.20	.59	.557
Information sharing											
(Step 1)	.10	-.47***	-.07	.12					.18	4.87	.001
(Step 2)	.15	-.51*	-.02	.13	-.03	-.16			.20	.15	.321
(Step 3)	.15	-.48*	.00	.15	-.05	-.18	-.12	-.00	.20	.77	.467
Shared awareness											
(Step 1)	-.10	-.35**	-.15	.09					.15	4.13	.004
(Step 2)	-.02	-.47*	-.21	.09	.12	-.03			.16	.38	.686
(Step 3)	-.04	-.52*	-.22	-.20	.10	-.07	-.05	.34	.18	1.40	.255

Note. All variables lie on 5-point Likert-type rating scales. Greater scores indicate a flatter structure, more decentralised processes, and greater alignment, flexibility, decision making, information sharing, and shared awareness. The regression coefficients are standardized.

*$p < .05$. **$p < .01$. ***$p < .001$.

Alignment moderated the relationship between decentralization in processes and effective and timely decision making, $b(SE)$ = -0.28(0.11), $t(94)$ = -2.61, $p < .05$, β = -.34. Thus, and contrary to our expectations, the negative effect of decentralised processes on decision making was strengthened by a greater alignment between structure and processes. However, simple slopes tests showed a significant negative relationship between decentralised processes and decision making in both the low- and high alignment condition, $b(SE)$ = -0.42(0.14), $t(94)$ = -3.12, $p < .001$, β = -.53, $b(SE)$ = -0.81(0.21), $t(94)$ = -3.87, $p < .001$, β = -1.0 (see Figure 5-3). Pd moderated the effect of a flat structure on flexibility, $b(SE)$ = -0.01(0.01), $t(94)$ = -2.51, $p < .05$, β = -.25. Specifically, simple slopes tests showed a significant positive effect of flat structure on flexibility in low-Pd cultures, $b(SE)$ = 0.33(0.14), $t(94)$ = 1.99, $p < .05$, β = .35, whereas this effect was non-significant in high-Pd cultures, $b(SE)$ = -0.08(0.17), $t(94)$ = -0.49, $p < .63$, β = -.09 (see Figure 5-4). Thus, a flat structure predicted greater flexibility in low-Pd cultures only, in line with our expectations.

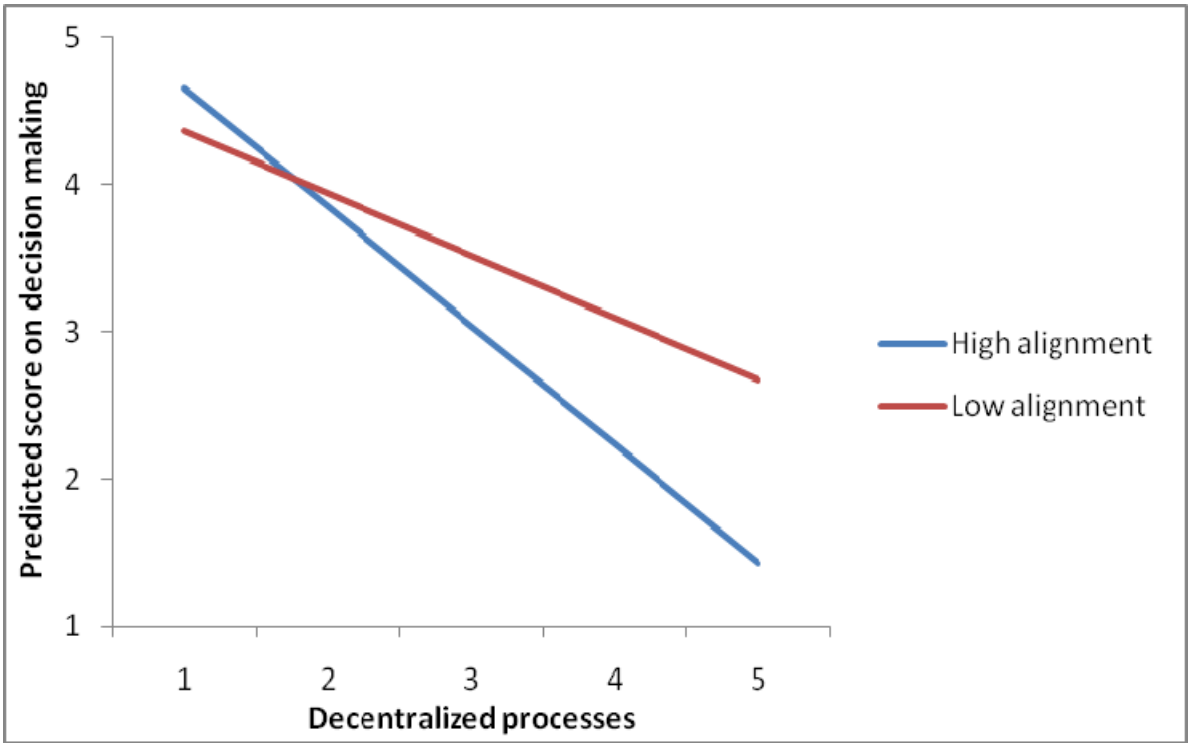

Figure 5-3: The Moderating Effect of Alignment on the Relationship Between Decentralised Processes and Decision Making at High (*M* + 1 *SD*) and Low Alignment (*M* – 1 *SD; N* = 103).

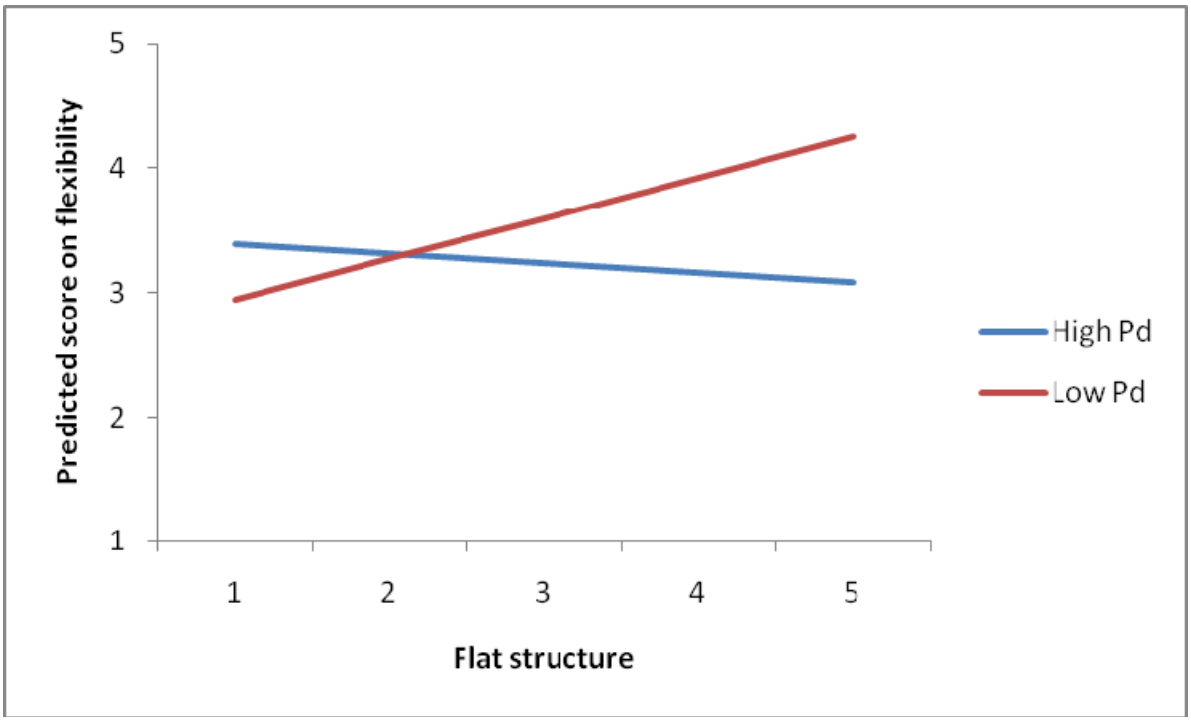

Figure 5-4: The Moderating Effect of Power Distance (Pd) on the Relationship Between a Flat Structure and Flexibility at High (*M* + 1 *SD*) and Low Pd (*M* – 1 *SD; N* = 103).

Chapter 6 – INTERVIEW ANALYSIS

by

E. Bisig, M. Granåsen, S. Valaker and J. Marklund

The data collection at the KFOR HQ, Pristine, Kosovo was conducted over a five-day period, October 11 – 15, 2010, including both surveys and interviews. While the survey results were presented in Chapter 5, the interview results are presented in the current chapter. A total of 15 people in key positions (from now on referred to as Subject-Matter Experts (SMEs)) were interviewed. The interviews were semi-structured and each interview lasted approximately 45 minutes to 1 hour. The SMEs were interviewed one at a time, by two researchers from the NATO RTO HFM-163.

6.1 CONTENT ANALYSIS

In this section, the responses for each interview question are summarised. Also, the identified relations between input factors and operative goals are presented.

The interview questions were deduced from the model created by the HFM-163 team. The model may not be exhaustive, that is, there is a risk that some constructs that are of importance to organisational effectiveness in the KFOR HQ were not included in the interview protocol. Several issues emerged during the interviews. In particular, the differences between day-to-day business versus the general picture of the HQ, influence political sensitivities and novel cross-cutting tasks nuances the way the factors are spelled out in the HQ. There are also nuances with regard to what the consequences of the input factors are for the output factors.

6.1.1 Organisational Structure: J-Structure or Other

With regard to the question of how the HQ was organised, specifically whether or not a J-Structure[1] is used, there were mixed opinions. Some thought it was a J-structure, while others saw it as either a J-structure undergoing change or something other than J-structure.

A number of the SMEs went to some length at explaining the J-structure in the HQ and what it entailed. It was mentioned that the J-structure was given by “Standard operating procedures”. One SME with a logistics background described it as having three pillars in their own unit: “LOG PLANS, LOG OPS, and LNOs (Liaison Officers)”.

The interview results gave at hand that the deviations from traditional J-structure were mainly related to logistics. J1, J4, and J-engineering had recently been merged into a “resource package”. The transfer of location of support from Skopje to Pristine was also thought to have resulted in some structural changes. Another deviation from J-structure mentioned was the MCA division that was now a separate section, while it was formerly a section within the J4 branch. The MCA division was regarded by SMEs as separate from the J-branches.

Formation of ad hoc teams from different J-structure sections was also mentioned as an example of deviation from traditional structure. These ad hoc teams were set up for certain focus areas, and targeting was mentioned as such an area.

[1] The majority of NATO operative HQs are organised according to the J-structure, in which the HQ is divided into 9 branches – J1 – J9. J1 – Manpower and personnel, J2 – Intelligence, J3 – Operations, J4 – Logistics, J5 – Plans and Policy, J6 – Communication and Information Systems, J7 – Training and Exercises, J8 – Budget and Finance, J9 – Civil-Military Co-operation The J stands for Joint indicating that the HQ consists of multiple services.

6.1.2 Organisational Structure: Hierarchical or Flat

The general opinion from the SMEs was that the HQs had become flatter in its organisational structure than before, although it was still hierarchical. A minority thought that it was hierarchical to a large extent. One of the SMEs emphasised that structure was influenced by functional areas rather than the flat-hierarchical axis.

Those who viewed the structure to be flatter than before mainly related this to decreased manning due to the recent personnel reduction of the HQs and to changes in the type of skills needed to perform the various tasks. Some of those who had this view also emphasised that flatter was better for a smaller organisation, in that a shorter chain of command resulted in faster response times and increased flexibility. One respondent viewed the structure as flat on a day-to-day basis while remaining generally hierarchical overall.

Those who viewed the HQs as primarily hierarchical also viewed this as detrimental to work. According to these SMEs, this hierarchy made it more difficult to reach goals and coordinate efforts between branches, slowing down work as communication between branches was more difficult.

In relation to the model, the SMEs indicated that there was a certain amount of hierarchy associated with the different operative goals. However, no relationships were seen between this factor and other input factors (see Figure 6-1).

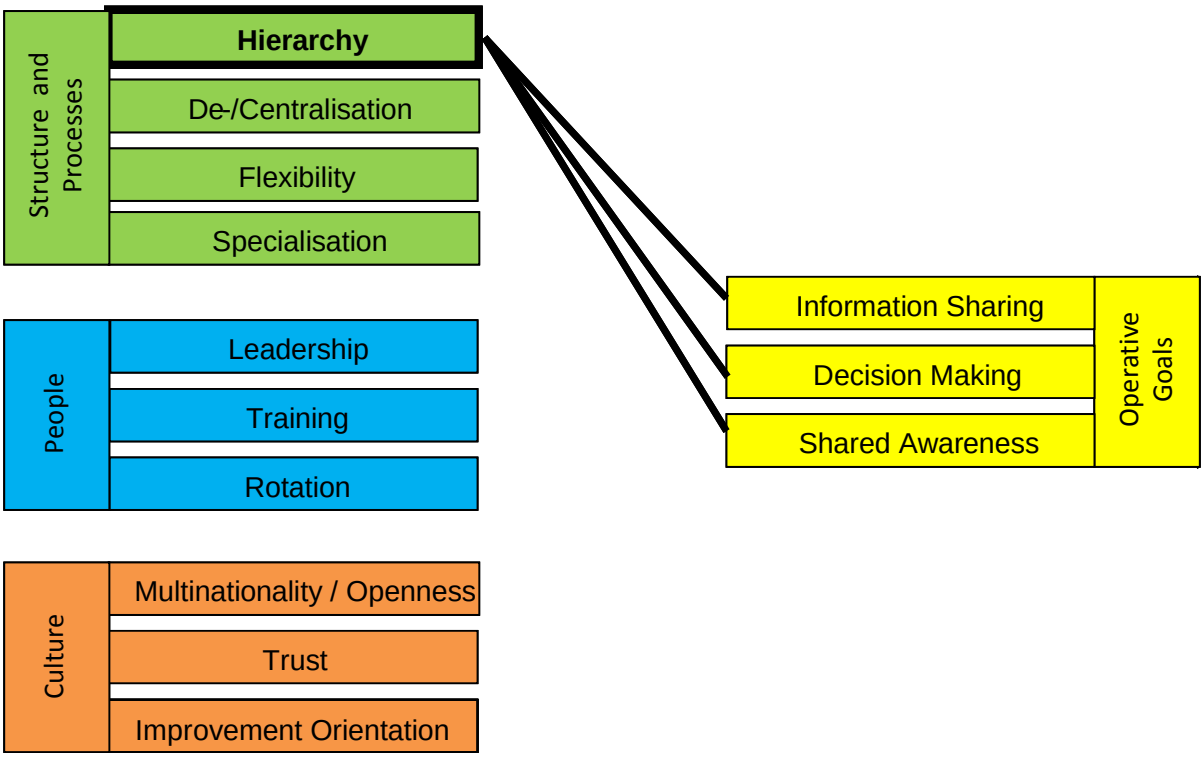

Figure 6-1: The Relationship Between Hierarchy and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness.

With relation to the model, interview results showed that a flat structure may **positively impact**:

- **Information sharing**, where a flat hierarchy facilitates information sharing and cross-flow communication.
- **Decision making**, in that a flat structure results in shorter chain of command, thus faster responses.

- **Shared awareness,** due to that a flatter structure results in a more direct communication between branches.

According to the interview results, a flat structure may **negatively impact**:

- **Information sharing,** if cross-flow of information is missing.

6.1.3 Centralised or Decentralised Command Processes

Some respondents viewed the command processes as too centralised, while others argued that processes were too decentralised. Centralisation was thought to be characteristic of how higher echelons of the HQ made decisions, while in day-to-day business, command processes were viewed as more decentralised.

Those who viewed the HQ as too centralised meant that it was causing bottlenecks in information sharing and decision making. As an example, one SME expressed that the need to get authorisation for everything was a problem which is linked to centralisation.

Those with the opposite opinion, the HQ being too decentralised, meant that the decentralisation could cause problems if the J-heads were not qualified. More centralisation was emphasised as important and necessary due to political sensitivities (i.e., the decisions should be in accordance with NATO strategy).

A third set of opinions centred on a division between day-to-day business and long-term decisions. One respondent emphasised that the HQ was centralised in reporting but decentralised in daily work. Another respondent in the MCA division pointed at his branch as decentralised.

In relation to the model, the SMEs to some extent related centralisation to the different operative goals and input factors (see Figure 6-2).

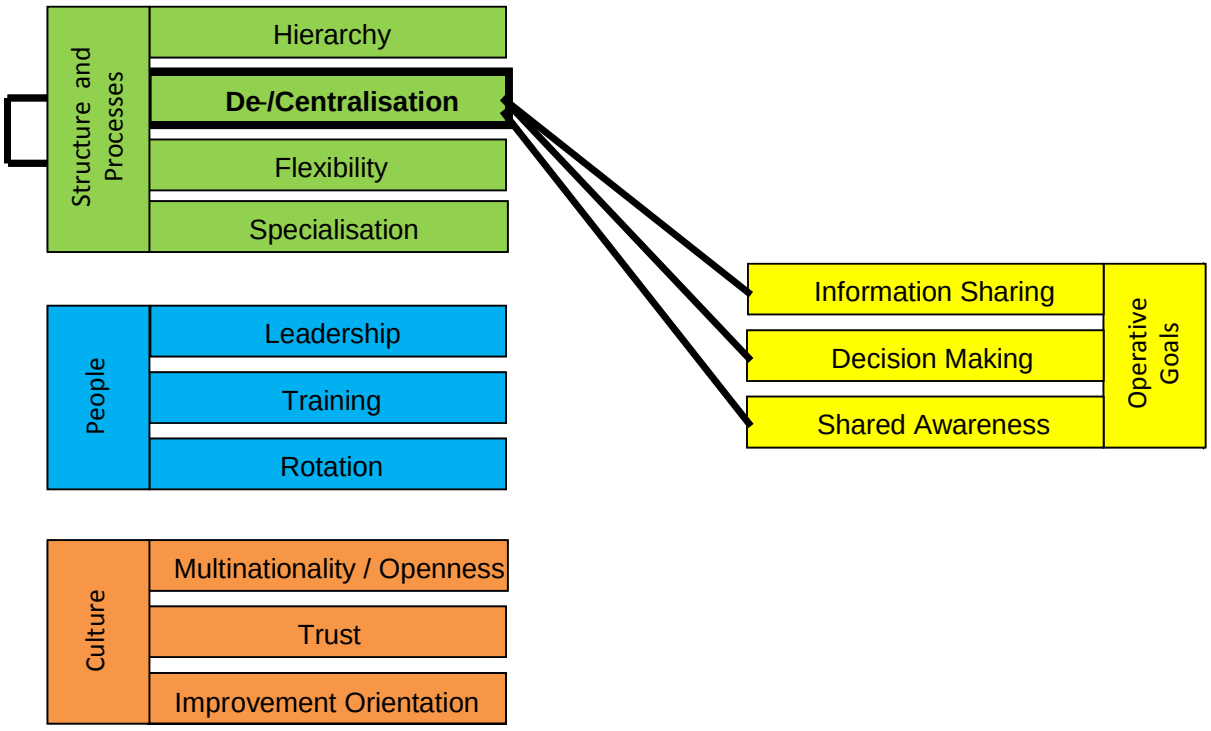

Figure 6-2: The Relationship Between Centralised/Decentralised Command Processes and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness.

Regarding the model, interview results showed that centralisation **positively impacts**:

- **Decision making**, because it guarantees that decisions are made in accordance with NATO strategy.

Centralisation **negatively impacts**:

- **Flexibility,** because the time to react on sudden events is longer.
- **Information sharing**, since bottle necks are created and information flows slower in the system.
- **Decision making**, because subordinates need to get authorisation for everything, and it makes decisions slower.
- **Shared awareness,** since decentralisation facilitates horizontal coordination.

6.1.4 Flexible or Rigid Work Environment

The work environment was thought of as flexible to some degree by most of the respondents. Some viewed their own unit as more flexible than the HQ as a whole and that there was more room for flexibility the lower the hierarchical level. There were a few respondents who viewed the environment as quite rigid. The respondents gave different examples of what could enhance or hamper flexibility. Factors facilitating flexibility related to personal attributes, common goals, experience, and information sharing. When asked what could hamper flexibility, respondents mentioned personality, bureaucracy and administration, lack of access to information systems and factors relating to multi-national issues, such as the lack of language skills and culture awareness.

Most of the SMEs believed that flexibility was a crucial aspect of an efficient HQ. One respondent expressed that for short term issues, a lack of flexibility was not detrimental to organisational effectiveness. However, in long-term situations where more complex solutions are demanded, flexibility is crucial to organisational effectiveness. Still, units should not do things completely on their own. In some units, due to small staff, flexibility was viewed as necessary for the unit. Conversely, flexibility was not seen as positive in all contexts. For example, a more rigid process was viewed as important in order to avoid confusion and maintain focus in some contexts. Some pointed out that the work environment was rigid in appearance but flexible in practice.

In relation to the model, the SMEs to some extent, related flexibility to the different operative goals and input factors (see Figure 6-3).

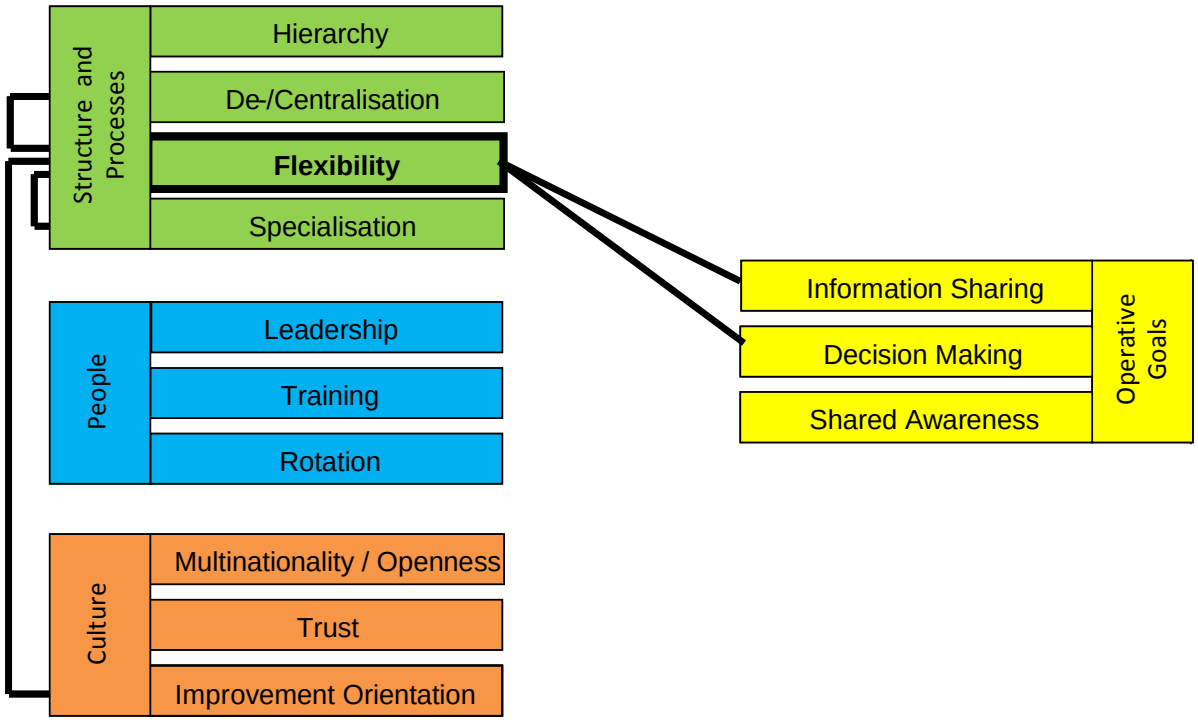

Figure 6-3: The Relationship Between Flexibility and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness.

Flexibility **positively impacts**:

- **Improvement orientation**, because a flexible organisation allows improvements.
- **Information sharing**.

Flexibility is **positively impacted by**:

- **Overlapping roles**, due to that the system is more redundant when roles overlap.
- **Information sharing**.
- **Decision making**.

6.1.5 Specialists or Overlapping Roles

All SMEs viewed the roles in the HQ as specialised rather than overlapping which was generally described in positive terms. For example, “specialisation demands a person to be focused, which is good”. A few SMEs expressed a need for more overlap within the HQ. One of the SMEs expressed the need for more overlap because people new to the HQ are too specialised and do not recognise what is going on in other branches within the HQ. Another SME expressed the need for overlap by saying that “people do not consider others work and are heads down”. A few of the SMEs also expressed a preference to have more overlaps since the HQ needs to be more flexible. One of the officers noted that there are situations where specialists are missing (for vacancy or on leave), and this puts more demand on those already in the HQ. In one of the branches that contained both civil and military personnel, the civilians, due to longer terms at the HQ, had more specialised roles than the military personnel due to their shorter terms at the HQ which resulted in more overlapping roles. This was considered as a good mix by the SMEs.

Views on how the downsizing of the HQ had affected the specialisation diverged. One SME said that as a result of downsizing, roles had become more specialised, which reduced the flexibility within the HQ.

Another interviewee noted that roles had become more overlapping due to fewer people being available to conduct the tasks. It might be that different branches were affected in different ways by the downsizing of the HQ. The general impression of the SMEs on specialisation can be summarized in the quote, “there is specialisation in the structure, but you have to be pragmatic case-by-case”.

In relation to the model, the SMEs, to some extent, related specialisation to the different operative goals and input factors (see Figure 6-4).

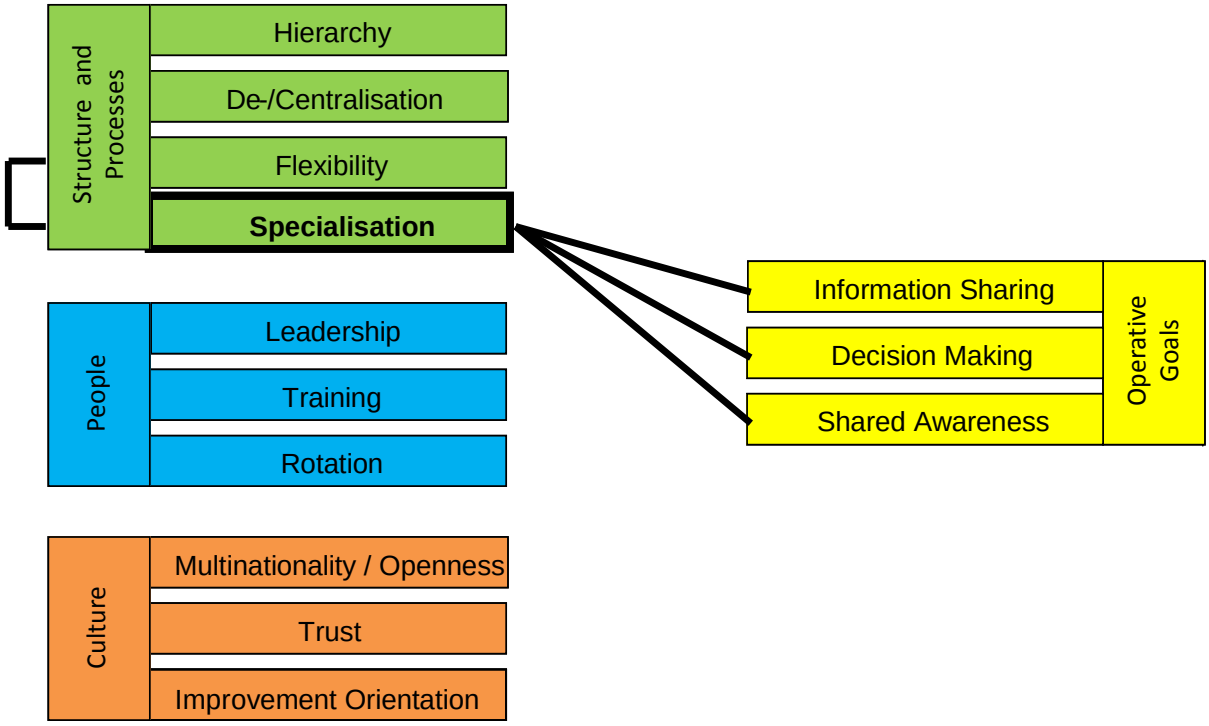

Figure 6-4: The Relationship Between Role Specialisation and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness.

Overlapping roles **positively impacts**:

- **Flexible** structures and processes of an HQ, because the system is more redundant when roles overlap.
- **Information sharing,** since overlapping roles reduce stove-piping tendencies.
- **Shared awareness,** because overlapping roles also lead to a broader understanding of others’ tasks and responsibilities.
- **Decision making,** since some decisions impact several areas, it is good to have people with interests/ knowledge within/about overlapping areas contributing to these decisions.

6.1.6 Leadership

The leadership of the current HQ was viewed very positively by the SMEs. To this end, the SMEs’ answers to questions about leadership need to be considered carefully, since some SMEs may have been worried about their opinions about the leadership reaching their superiors. However, since the leadership was described quite similarly by the SMEs independently of each other, the result is considered reliable. The leadership at the highest level of the HQ was described as rather formal and quite typical for a military HQ with clear rules and a chain of command. This was seen as a positive rather than a negative

trait of the HQ. Within the branch, leadership was described as less formal. The leadership was characterised as "comfortable", "inclusive", "open and friendly", "respectful", "supportive", "professional", and "effective". Several participants stressed that the superiors are approachable and listen to the opinions and suggestions of the subordinates before making the decisions. Discussion is allowed and the superiors give guidance and enough time to solve tasks. There was the belief that "open discussion could be had without rank dominating these discussions within the HQ". However, one of the SMEs felt that the civilians in the HQs were not accepted by the military and that this led to communication problems between the civilians and military personnel.

As an example of good leadership, some of the participants mentioned the commander's daily briefings created a common view of priorities, understanding of commander's intent and a forum for information sharing. Several SMEs mentioned information sharing and interaction as critical aspects of leadership. One of the SMEs perceived information sharing as better in a multi-national HQ than in a national HQ and that it needs to be better due to the frequent rotations in a multi-national HQ.

In relation to the model, the SMEs, to some extent, related leadership to the different operative goals and input factors (see Figure 6-5).

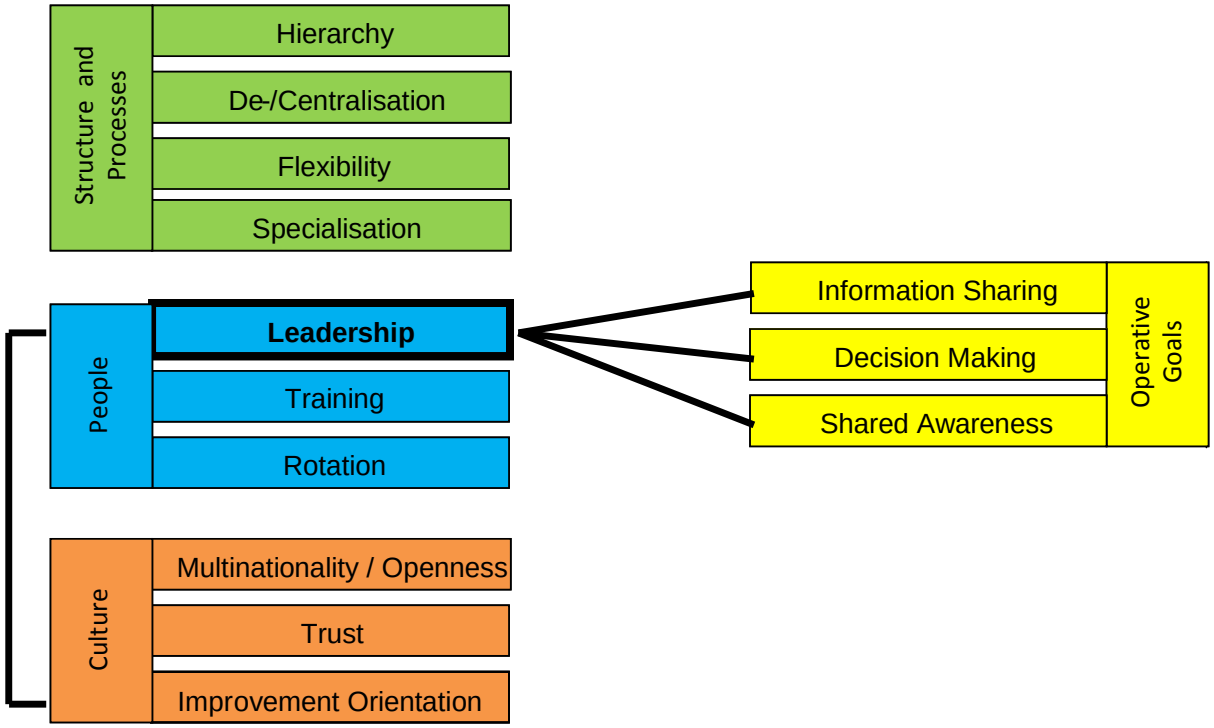

Figure 6-5: The Relationship Between Leadership and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness.

Good leadership was characterised by the SMEs as a leadership that **facilitates**:

- **Improvement orientation,** since SMEs appreciate leadership that is approachable and listens to the opinions and suggestions of the subordinates.
- **Information sharing,** through common meetings.
- **Decision making,** in terms of openness to suggestions by subordinates, enough time to solve tasks, and formalised.
- **Shared awareness**.

6.1.7 Pre-Deployment Training

Pre-deployment training is a national responsibility, and therefore the quantity and quality of training received differed between the SMEs. Some personnel had received national training only, while others received both national and multi-national training. Most of the military SMEs had attended the two-week KFOR Key Leader Training course located at the KFOR HQ prior to their deployment. This was considered to be very good in that it made the start of the deployment easier and many of the SMEs stated that this course should be mandatory. The need for training was considered depending on personal experience and whether the position was a staff or field position, where field positions were regarded as requiring more training. Less training is needed for second or third deployments, but training is always needed since the HQ changes so fast. In terms of what should be included in pre-deployment training, the SMEs mentioned cultural training, situation/culture/complexity of political situation in Kosovo, structure and operations of KFOR, time management and operational planning cycle, language skills (for non-native English speakers), and learning how to use the technical resources.

In relation to the model, the SMEs, to some extent, related pre-deployment training to the different operative goals and input factors (see Figure 6-6).

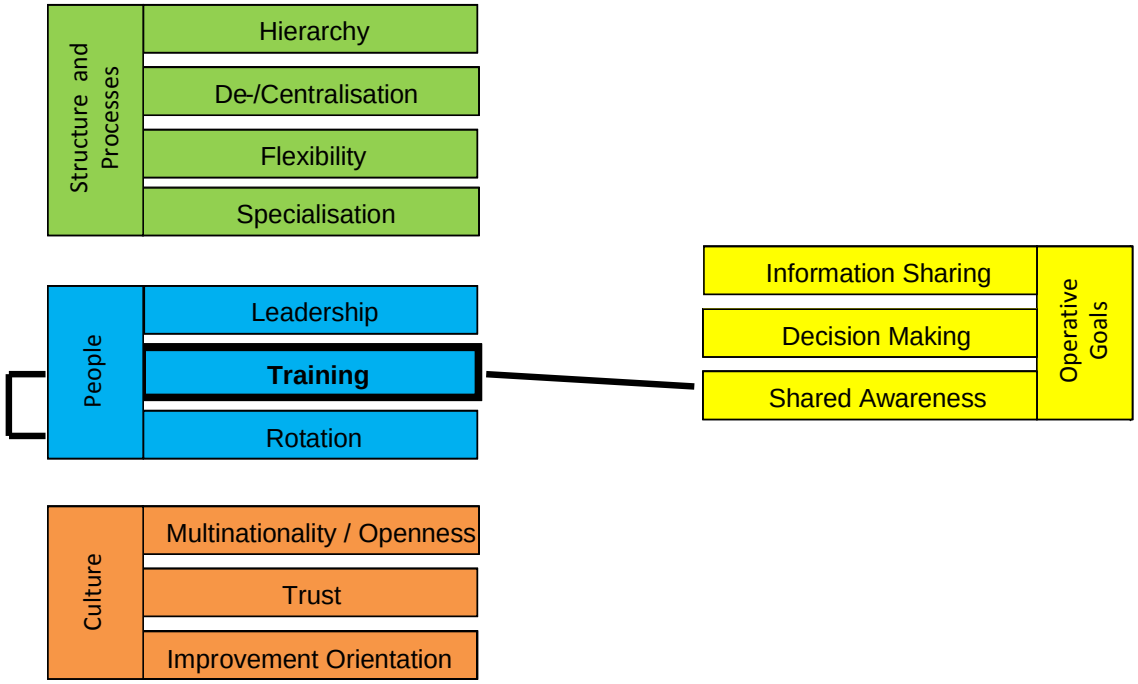

Figure 6-6: The Relationship Between Pre-deployment Training and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness.

Pre-deployment training **positively impacts**:

- **Rotation,** since it will reduce the loss in effectiveness during the handover/takeover period.
- **Shared awareness,** because it creates an understanding of the procedures and structures of the HQ (especially the on-site key leader training).

6.1.8 Personnel Rotations and Handover Process

Most SMEs had experienced a Handover-Takeover (HOTO) period of 1 – 2 weeks. For those having a two-week HOTO, typically, the first week the successor had a “back-seat” role, (i.e., mainly observing what

the predecessor was doing and the second week they swop places letting the successor do most of the work supported by the predecessor). However, the process and time committed to HOTO varies between Nations. Two weeks was considered sufficient, however, some thought that one week could be enough if the successor has experience from earlier deployments. One of the SMEs stressed that administrative in- and out-processing issues also takes a lot of time, so that if there is a two-week HOTO, half the time is spent on administration.

A general opinion expressed by the SMEs was that the HOTO process together with the short rotation cycle reduces the effectiveness of the HQ, by impeding institutional memory, which in turn increases the amount time it takes to learn the work. This was particularly stressed by the SMEs in the MCA division, since they are dependent on personal relations with the members of Kosovo Security Forces. The SMEs felt that developing this relationship is particularly difficult to achieve because Nations do not always send personnel having the required competencies according to the job descriptions and that the assignments are too short. However, as one of the SMEs expressed, “in a multi-national HQ there is nothing you can do about the dip in effectiveness”. One person also expressed that rotations are positive in that “new eyes and new solutions” are brought into the HQ. However, opinions diverged on whether rotations should be concentrated to a few periods per year or be spread out evenly by branch. In the MCA division, evenly spread rotations were considered as necessary due to the need to maintain good relations with the Kosovo Security Forces. Others believed that efficiency would be improved if the rotation periods were more concentrated. One of the SMEs mentioned that the chief and the deputy should not rotate at the same time.

Well-trained personnel who match the job descriptions, earlier experience, and a well-planned and sufficiently long handover/takeover period were considered as most critical for maintaining efficiency in the HQ although personnel are continually changing.

In relation to the model, the SMEs to some extent related rotations to the different operative goals and input factors (see Figure 6-7).

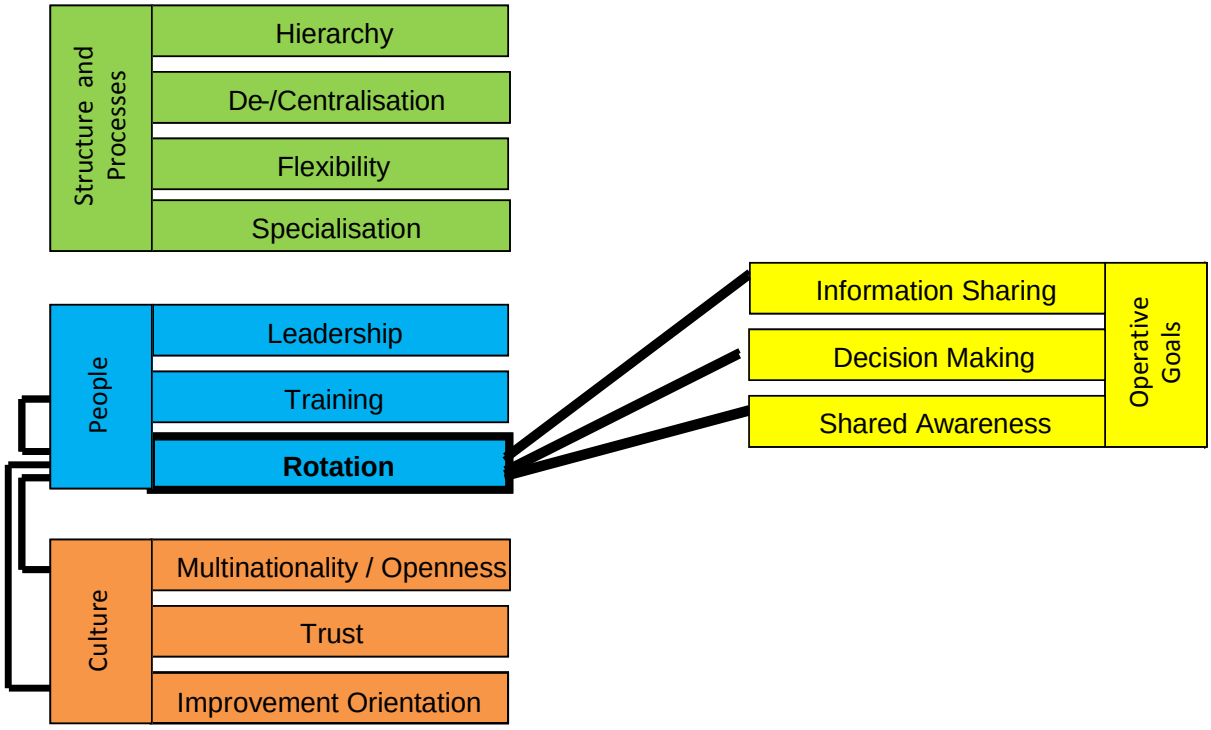

Figure 6-7: The Relationship Between Rotations and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness.

Rotations **positively impacts**:

- **Decision making** in that new eyes and solutions are brought into the HQ.

The handover process **negatively impacts**:

- **Improvement orientation,** due to the loss in institutional memory.
- **Information sharing**.
- **Decision making,** especially if chief and deputy are rotated in an out simultaneously.
- **Shared awareness,** because it takes time to learn who does what in the HQ.

The handover process **interacts with**:

- **Multi-nationality,** since frequent rotations is a part of the system of a multi-national HQ.

6.1.9 Multi-Nationality

Most SMEs spoke positively about multi-nationality in the HQ, and preferred to speak about "challenges" rather than "negative aspects" regarding the fact that the HQ was composed of personnel from 30 different countries. A common opinion was that multi-nationality, in general, is positive in that it brings different perspectives and solutions to problems. It is also good for the individual, who becomes more open-minded by learning about other Nations, cultures, and perspectives. Furthermore, some SMEs mentioned that a multi-national HQ is more powerful due to perceived view that it is more neutral than a national HQ. Still, the SMEs generally believed that a multi-national HQ is less effective than a national HQ. Arguments for this view were based primarily on the reality that people are on shorter assignments in a multi-national HQ, and the communication problems that arise due to varying English language skills. Furthermore, national caveats were mentioned as a problem by two of the SMEs. However, some of the SMEs believed that individual effectiveness is improved when working in a multi-national HQ since you want to make a good impression of the country that you are representing.

In relation to the model, the SMEs to some extent related multi-nationality to the different operative goals and input factors (see Figure 6-8).

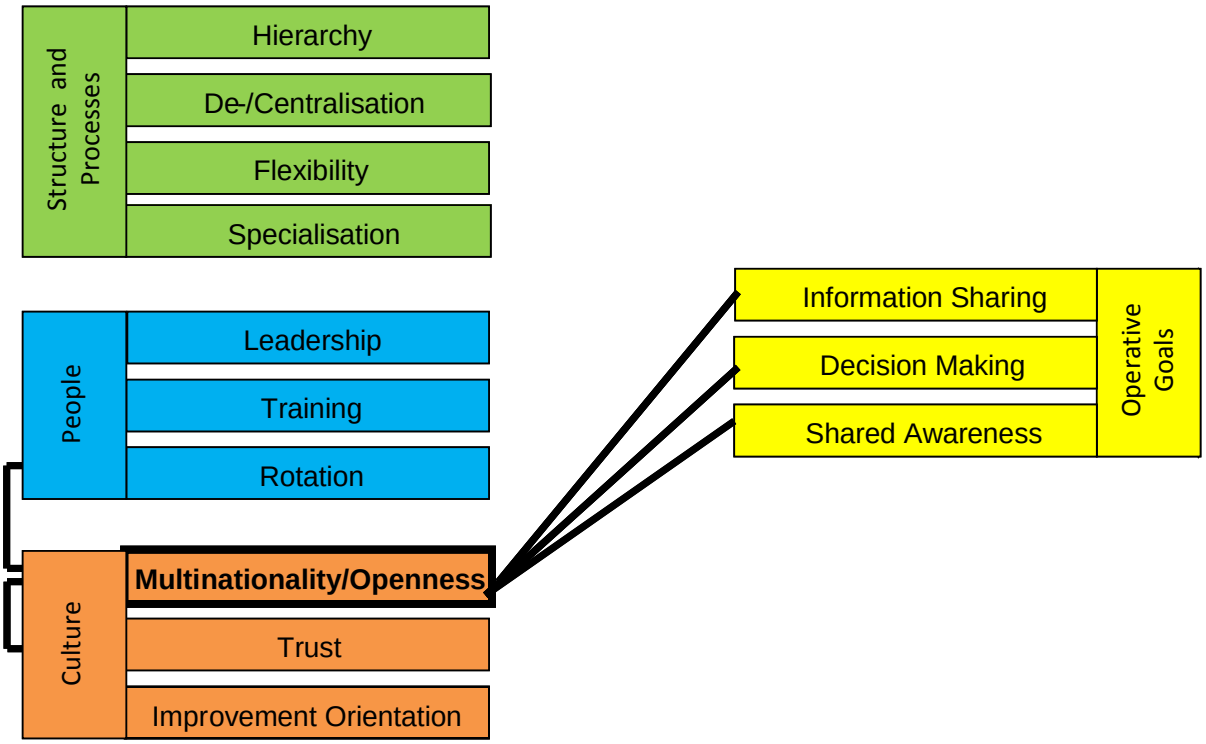

Figure 6-8: The Relationship Between Multi-Nationality and Openness to Diversity and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness.

Multi-nationality **positively impacts**:

- **Decision making,** since new perspectives and solutions to problems are brought into the HQ.

Multi-nationality **negatively impacts**:

- **Information sharing**, if it generates communication problems and misunderstandings.
- **Shared awareness**, because differences in the national training, methods and procedures may make reaching a common understanding of methods and procedures difficult.
- **Shared awareness,** because national interests and hidden agendas may lead to different aims.

Multi-nationality **interacts with**:

- **Rotations,** because frequent rotations is a part of the system of a multi-national HQ.
- **Trust,** since trust may be a sensitive issue in a multi-national HQ.

6.1.10 Trust

The SMEs indicated that there was a quite high level of trust in the HQ, although one expressed that he had become more conservative during his time in KFOR. There were mainly two themes concerning trust, which could relate either to personality of the SMEs or on the definition of the term. Some of the SMEs expressed that they trusted other members of the HQ by default, they trust a person until the opposite is proven. Two of the SMEs related this to the military structure, there is a job description and a rank, and trust is based on the person adheres to their job description and rank. “I always trust in soldiers until I realize somebody does not deserve trust.” The other opinion was that trust has to be established, based on informal relationships, and on daily work (products). Two of the SMEs talked about differences between organisational/official trust and

individual trust. “Official trust is there from the beginning, while individual trust has to grow, like in families or friendships.” Since the question was not specified to a certain type of trust, a reason for these different opinions might be that some referred to official trust (based on organisation, formal role, job description) and others individual trust (related to a person). These different types of trust are also reflected in the SMEs’ views on what is critical in order to establish trust:

- Informal information sharing;
- Face-to-face-meetings;
- Openness and acceptance of differences;
- Complying with rules; and
- Delivery of requested products on time.

The way a situation of mistrust was handled within the HQ differed between the participants. One SME said, “I supervise and give feedback on how to improve”. Another SME stated, “When I realise I cannot trust someone, I go to someone else, there is no time to give a second chance”. One SME believed that there are cultural differences in how a situation of mistrust can be handled; “some people feel uncomfortable by feedback”. Finally, trust may be a sensitive issue in a multi-national environment, and can cause dilemma situations.

In relation to the model, the SMEs, to some extent, related trust to the different operative goals and input factors (see Figure 6-9).

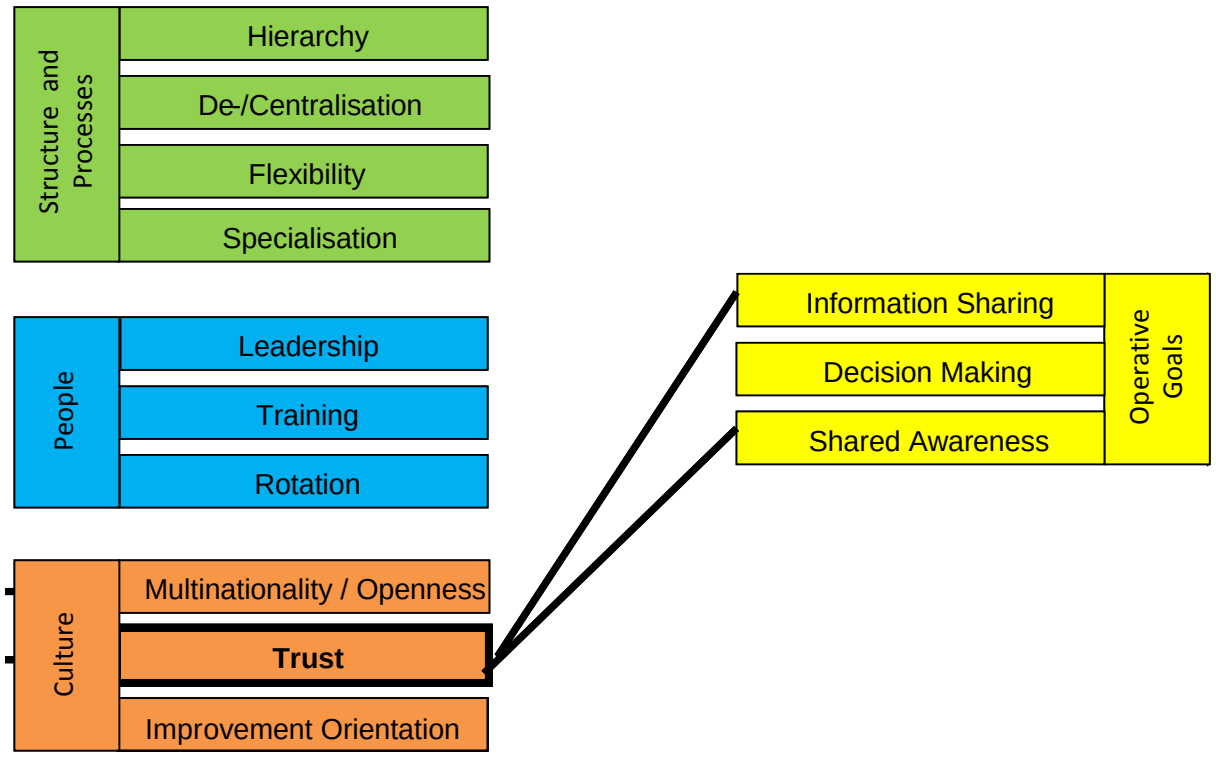

Figure 6-9: The Relationship Between Trust and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness.

Trust is **positively impacted** by:

- **Information sharing,** since information fosters trust.
- **Shared awareness,** since trust may be based on knowing about others' tasks and responsibilities.

Trust **interacts with**:

- **Multi-nationality,** since trust may be a sensitive issue in a multi-national HQ.

6.1.11 Improvement Orientation

To be improvement oriented is to allow initiatives to improve work, processes, and routines. It has both advantages and disadvantages. It can either lead to improvements or it can generate mistakes. We asked our SMEs how improvement oriented they perceive the KFOR HQ, whether there exists formal procedures for improvements and if they have concrete examples in mind.

The respondents were of different opinions–some believed the HQ was improvement oriented, some believed it was not. "I would say ideas are accepted and the HQ tries to improve wherever they can and are asked to do so", said one SME. "No, I think it is about maintaining the status-quo. […] And it's probable that it [improvement orientation] doesn't happen because people don't have time in their course of rotation", stated another SME. These ambivalent opinions might be caused by different leadership styles as stated by another SME, "Sometimes yes, sometimes no. It depends on the persons who have the leadership of this HQ". It was noted that there definitely is a need for improvement and innovation to manage all the new and complex tasks. It was also mentioned that proactivity is possible and allowed: "Everyone, in his own area of responsibility, has the authority and also the possibility to prepare something and to provide his proposals for improvement or whatever". Crucial for this proactivity and improvement orientation in general is information sharing. In terms of the formal procedures required for improvement orientation to occur, the SMEs specified Lessons Learned (LL), regular revisions of Standard Operating Procedures (SOP), After Action Reviews (AAR), and monthly Assessment Cycles. But the impact of these procedures has been met with doubt: "But I am not sure if they have much influence on the improvement. It's more a consequence of the rotation. When you leave and get your AAR too late, the new crew has to start again. I don't think my experience will have an influence on the persons that come after me". Some SMEs could not give any examples for formal improvement procedures, however apart from formal procedures several people also described informal ways to improve work in day-to-day life: "We change our working routines when we see that there are some weaknesses or gaps. Furthermore, we always try to find a way to make the work easier and better. That's always in our minds and we are trying to improve our procedures and make things run smoother."

In relation to the model, the SMEs to some extent related improvement orientation to the different operative goals and input factors (see Figure 6-10).

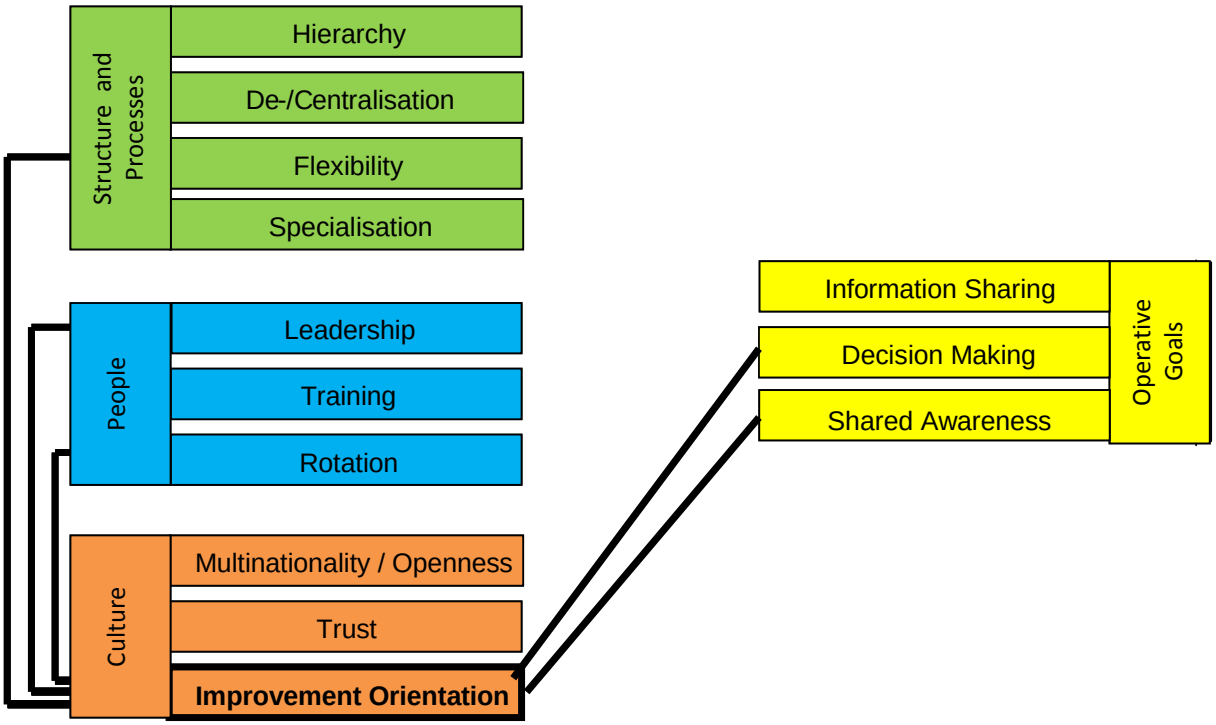

Figure 6-10: The Relationship Between Improvement Orientation and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness.

Improvement orientation is **positively impacted** by:

- **Flexible** structures and processes of a HQ.
- **Leadership** that is described as approachable and that listens to the opinions and suggestions of the subordinates.
- **Shared awareness** because you need to know how tasks and responsibilities are related before an attempt to improve the organisational work is undertaken.
- An effective and timely **formal and informal information flow**.

Improvement orientation is **negatively impacted** by:

- High rotation of staff because leadership style changes and organisational memory gets lost.

6.1.12 Information Sharing

Managing information is the HQ's way of handling information or knowledge. We wanted to know how the information sharing in the KFOR HQ works, what the most critical aspects are that influence information sharing and how it can be improved.

Most of the SMEs thought that information was available and easily accessible in the KFOR HQ. "There is a lot of information inside this HQ, but the sharing is not the problem, the information is out there in the different computer systems or anywhere else. The main problem is to get the right information. […] There is so much information that the control of the information is very difficult." This information overflow is mentioned by several others: "All information is available. There is too much information. The problem is how to select the proper information." "It's like the internet: You have all information there. I think there is no deficit or lack of information. But you have to know where you have to go, where you get it. Sometimes I have to go to the counterpart face-to-face to get the information. Sometimes the information

is just in the net on the data base". Therefore, the critical issue about information sharing is more about knowing where to look for and get the relevant information than there being a lack of information. "To know what information you need and where to get it, to know which rights and power you have. It's about knowledge of the system." Hence, one critical factor that influences information sharing is knowledge of the system. Other factors mentioned were persons being proactive about and willing to share information (e.g., "A proper system is just the underlying basis for efficient information sharing. However, it is not enough to have rules and tools in place; people must be motivated to share information and understand the value of doing so"), combining formal and informal information sharing, a flat structure, and technology (e.g., "The flat structure we have here as well as the modern technology facilitates the efficiency of our information flow").

Aspects that were mentioned as influencing information sharing negatively were bottlenecks, rotation (e.g., "The more people rotate, the more information transfer is needed and sometimes knowledge may get lost"), and restricted access for civilians (e.g., "The fact that civilians are not granted the same access can lead to problems because they don't get the same information even though it is relevant for them as well"). As important sources for information, the daily evening updates of the commander, the bulletin board, and e–mail were mentioned. Information that was considered missing or rare came from outside the HQ: "There is only a problem with operational information from the theatre to facilitate our assessment. […] Problems occur mainly between the staff and where the information is collected."

In summary, all relevant information was considered to be available and accessible. However, availability alone is not enough. Being proactive and knowledgeable of the system are the most essential aspects for effective information sharing and it is important to find the right balance between too much and too little information in terms of sharing and retrieving information. "This is an art, not a science – how to downsize to the proper level, to all the information needed."

In relation to the model, the SMEs, to some extent, related information sharing to the different operative goals and input factors (see Figure 6-11).

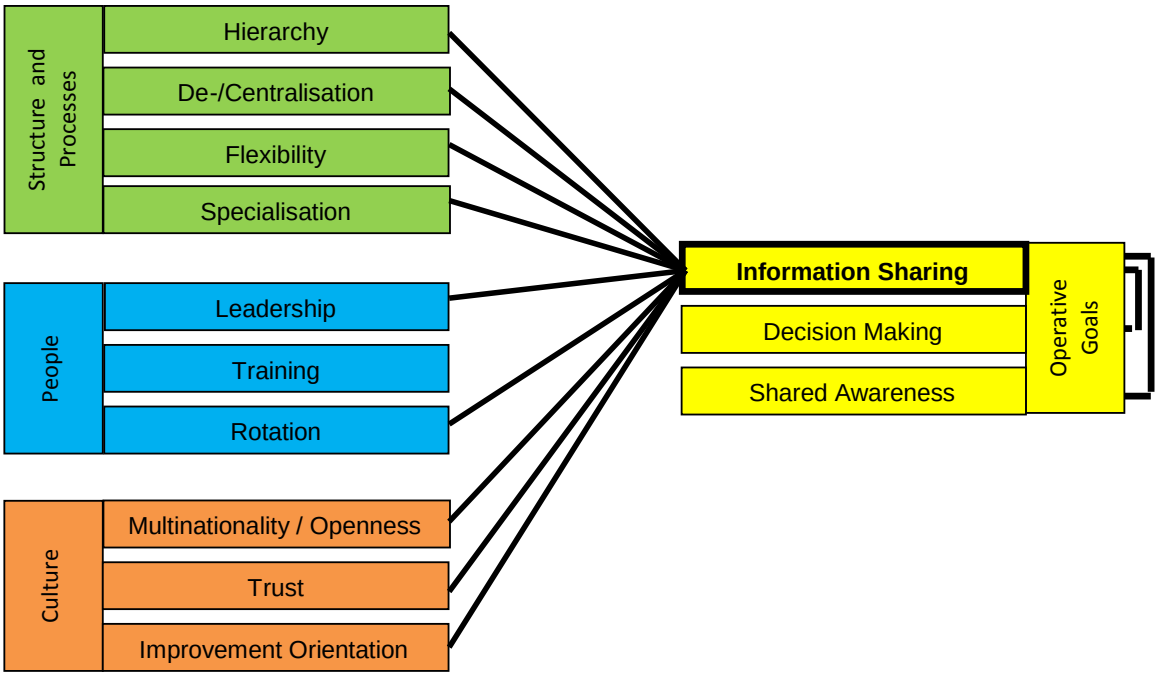

Figure 6-11: The Relationship Between Information Sharing and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness.

Information sharing is **positively impacted** by:

- A **flat** structure.
- **Flexible** structures and processes of a HQ.
- **Overlapping roles** in a HQ.
- The **leadership style**; e.g., the commander's daily briefings are a good forum for information sharing.
- **Shared awareness** because a precondition for sharing information with others is the knowledge of the system, tasks, and responsibilities of one's colleagues.

Information sharing is **negatively impacted** by:

- **Hierarchy,** if the cross-flow is missing.
- **Centralization,** if it creates bottlenecks.
- **Rotation,** if it causes loss of institutional memory.
- **Multi-nationality,** if it generates communication problems and misunderstandings.

Effective and timely information sharing **positively impacts**:

- **Decision making** because enough information is needed to prepare good solutions.
- **Shared awareness**; e.g., regular meetings to share information enhance shared awareness.
- **Improvement orientation**.

Information sharing **interacts with**:

- **Rotation** – due to frequent rotations in multi-national HQs, information sharing needs to be better in a multi-national HQ in comparison with a national HQ.
- **Trust**.

6.1.13 Decision Making

Decision making includes identifying or creating multiple options, choosing among alternatives by integrating differing perspectives, and opinions of team members, implementing optimal solutions and monitoring consequences. The effectiveness of a HQ's decision is defined by its quality, timeliness, and effectiveness. We asked the SMEs to rate the decision making process in KFOR HQ, to tell us what works well or not so well, what the most critical influences are, and how decision making can be improved.

Overall, the SMEs believed that the decision making in the KFOR HQ was effective and timely. "There are procedures in place which also work fine in practice. If problems occur, it is rather personnel related than due to the system as such." The decision making process was described as formal, in line with regulations, flexible, and straight-forward. "The relevant aspect about decisions is to bring the problem to the floor. Each branch has to provide some information about this, and afterwards, the decision will be taken on the basis of the information, by the chief of staff or the commander." Some decisions are more complex: "[A final decision] is the result of a sequence of many decisions, discussions and assessments. Sometimes this process can be slow because the decision or part of the decision is like a diplomatic process and complex." Other people perceived the process as command-driven, linear, and tight. "It is very command-driven, which means that there is a small circle of different individuals who make up their mind to come to a decision for themselves and just issuing it instead of having the staff process where all

the specialists put together the information. This bottom-up approach thus gives the commander various alternatives to decide on." Hence, one suggestion to improve the decision making process was to give bigger mandates to the ACOS. Additionally, the process was found to be too slow in ad hoc situations. However, centralization and clearly defined roles make communication ways shorter, the commander more easily accessible, and, therefore, decision making faster.

Critical aspects for effective decision making mentioned were: enough information to prepare good solutions, sufficient language and communication skills to present this information to the one who are in charge of making decisions, enough time to make a decision, adequate levels of awareness, knowledge and experience, and broader thinking.

In relation to the model, the SMEs, to some extent, related decision making to the different operative goals and input factors (see Figure 6-12).

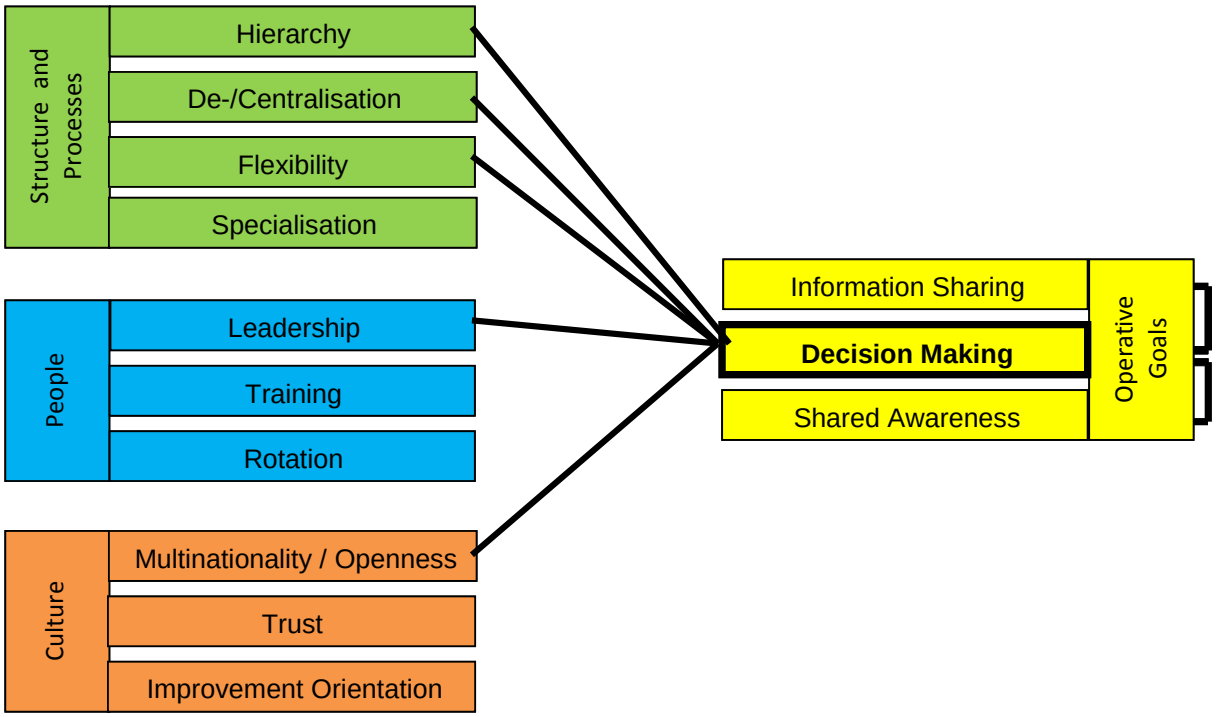

Figure 6-12: The Relationship Between Decision Making and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness.

Decision making is **positively impacted** by:

- **Decentralization** because a flatter structure and a shorter chain of command result in faster decisions and reactions.
- **Centralization** because it guarantees that decisions are made in accordance with NATO strategy.
- **Flexible** structures and processes of a HQ, since that enables flexibility in decision making.
- **Overlapping roles**; they are important because some decisions have impact on several areas and it is good to have people linking those areas.
- **Leadership** that is described as approachable and that listens to the opinions and suggestions of the subordinates.

- **Multi-nationality** the multi-national composition of a HQ results in different perspectives and solutions to problems and therefore leads to more balanced decisions.
- **Information sharing** because enough information is needed to prepare good solutions.
- **Shared awareness** because decision making needs adequate levels of awareness, knowledge, and experience of and in the organisation. Therefore, shared awareness improves the quality and increases the speed of decision making.

Decision making is **negatively impacted** by:

- **Centralization** because subordinates need to get authorisation for everything and the process is very tight demand for bigger mandates for the ACOS and people on lower levels.

6.1.14 Shared Awareness of Tasks and Responsibilities

Regarding shared awareness, the SMEs were asked to what extent there was shared awareness in this HQ, whether it is important in the daily work, what the most critical aspects are to generate it and how it can be improved.

All SMEs believed that a shared awareness of tasks and responsibilities was very important for the effectiveness of the KFOR HQ as it saves time, improves the quality and timeliness of decision making, helps to be initiative, enables synchronization of effort and harmonizes work, and facilitates collaboration. However, the opinions differ as to whether there is an adequate awareness or not. Some SMEs believed that there was enough shared awareness. “We are all informed about tasks, if necessary, if we are affected by the task. So I think there is no problem about shared awareness.” One SME believed that it was more an issue for the civilian personnel than for military personnel because it is a standard and commonly known structure for the military personnel. Others emphasised that it is a general problem in the HQ. “I think apart from the general understanding of what branch is doing what, there is little shared task awareness. No, I think you only know it if in a specific case, you work together with different branches. But in general, every branch has its own world.” Most SMEs agreed that improvement is needed but difficult. As critical aspects for improvement, they thought of: standardization of roles and structures for all NATO Nations, flat hierarchical structure, structure like in the Naples’ HQ with knowledge development centre, etc., horizontal coordination between the branches, understanding of operational planning system, key-leader/in-theatre/national training, less rotation, military experience, regular meetings to share information, willingness to bring people together, establishing (informal) relationships, having a genuine interest in the job and expectations of others, and data base or shared work place.

In relation to the model, the SMEs, to some extent, related shared awareness to the different operative goals and input factors (see Figure 6-13).

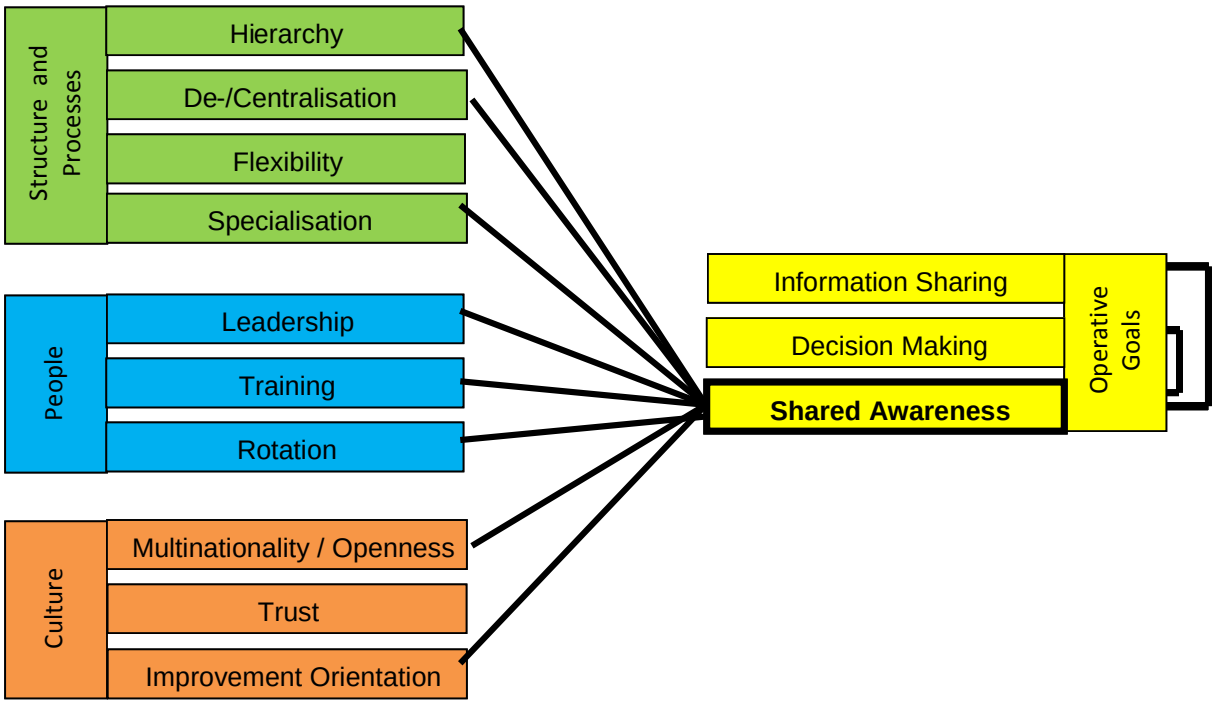

Figure 6-13: The Relationship Between Shared Awareness and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness.

Shared Awareness is **positively impacted** by:

- **Flat hierarchical structure** and horizontal coordination (decentralization).
- **Overlapping roles** that are linking different working areas and help to know what is going on in other branches.
- **Leadership** (e.g., the commander's daily briefings create a common picture of priorities and help understanding the commander's intent).
- **Pre-deployment training** (key-leader/in-theatre/national) in general and especially if it includes information about structure and operations of KFOR.
- **Information sharing** (e.g., regular meetings to share information enhance shared awareness).

Shared Awareness is **negatively impacted** by:

- **Rotation** because each time, it causes a loss of organisational memory.
- **Multi-nationality** because differences in the way of working make reaching a common understanding of methods and procedures difficult.
- **Multi-nationality** because national interests and hidden agendas leads to different aims.

Shared Awareness **positively impacts**:

- **Improvement orientation** and helps to be initiative.
- **Information sharing** because this process needs knowledge of the system to be effective.
- **Decision making** because it needs adequate levels of awareness, knowledge, and experience to be of the good quality and high speed.
- **Trust**.

6.1.15 Important Aspects / Summary

At the end of each interview, the SMEs had the opportunity to respond to what they thought were the most important aspects required to improve the effectiveness in the KFOR HQ. Their statements are listed below:

- To give more responsibility and freedom to act for the lower levels in the chain and command;
- To understand operational planning process;
- To have motivational meetings of the commander with key-leaders/staff where he tells his goals and says “thank you”;
- To centralize leadership;
- To man positions for at least 1 year;
- To spread rotations more evenly during the year;
- To improve training and experience;
- To send preparation packages to HQ personnel before starting deployment;
- Sufficient job experience and background;
- To select effective personnel;
- To improve formal and informal information sharing systems;
- To improve cultural interoperability;
- To better understand the environment of KFOR and Kosovo in general;
- To interact more in the local community to facilitate a better understanding of the local population; and
- To be proactive and make assessments about the future.

Chapter 7 – DISCUSSION

by

S. Valaker, A.R. Blais, M. Granåsen, A.L. Bjørnstad, F. Lichacz, Y. Yanakiev, I. Cohen, D. Resteigne and E. Bisig

7.1 GENERAL CONTRIBUTION

The NATO HFM-163 Task Group developed and tested a model of organisational effectiveness in operational NATO Headquarters (HQs). The model included input factors, the operative goals of the organisation, and the relationships between the input factors and operative goals. Initial interviews conducted with military Subject-Matter Experts (SMEs) highlighted structure and processes, people, and culture as important input factors to consider. Effective and timely decision making, information sharing, and shared awareness of task/responsibilities were identified as important operative goals. These aspects were in line with existing general and military models of organisational effectiveness, but our model also emphasised factors of particular relevance to a military HQ, such as rotation practices. The discussion primarily focuses on the second of the two tasks undertaken by the HFM-163 Task Group:

- Investigate potential models and tools for understanding, explaining, and measuring different aspects of effective adaptation and cooperation in multi-national coalitions.
- Make recommendations regarding improvement of education and training of NATO and partner countries' militaries for coalition operations.

We hypothesised the relationships among the input factors and operative goals. Largely, our quantitative results supported our hypotheses, although some did not. Our qualitative results also revealed the importance of the input factors in detecting organisational strengths and weaknesses. The recommendations focus on setting goals for a HQ, leadership and trust factors, and cultural awareness training.

In the following sections, the empirical findings are discussed in more detail including limitations of this study and implications for practice and possibilities for future research are highlighted.

7.2 DISCUSSION OF MAIN FINDINGS

The participants rated the structure of the HQ as less (vs. more) organic, about average in terms of its differentiation and rotation practices, and above average on its flexibility, transformational leadership, team trust, improvement orientation, and openness to diversity. They also perceived the KFOR HQ as operating with above average decision making, information sharing, and shared awareness.

These ratings provide a context to better understand our findings. In this section, we contrast and discuss the quantitative and qualitative in depth-interview findings from the KFOR HQ.

7.2.1 Structure and Process

The hierarchical regression models showed that flexibility was a significant, positive, predictor of effective and timely decision making and shared awareness within the HQ. The set of structure and process variables (i.e., organic, flexibility, and differentiation), entered first in the models, explained a large proportion (i.e., between 29% and 42%) of the variance in the output variables.

Surprisingly, however, the organic variable was not aligned in the expected ways with the flexibility and operational goal variables (i.e., decision making, information sharing, and shared awareness). A less organic organisation was related to greater flexibility and attainment of the operational goals than was a more

organic organisation. The moderating analyses with Power distance (Pd) and alignment (i.e., the alignment between the structure and processes) did not yield any significant results, and could not explain these surprising results.

A possible explanation for our unexpected quantitative results is that the national cultural composition of the respondents affected the results. High Pd defines a culture where people are used to working in hierarchic and centralised organisations [37],[38]. The level of Pd of our respondents may be considered relatively high (M = 48.4), or, in any case, too high for the personnel to be familiar with of the concept of an organic organisation and efficiently conduct their work in such an organisation. This explanation is supported by previous research. Results from three different military samples at both the HQ and tactical levels involving low-Pd samples demonstrated the opposite relationships of what we found here, that is, a flat structure and decentralised processes led to increased flexibility and more effective information sharing and decision making [13].

Some support for the explanation that level of power distance influence perception of structure was also demonstrated in the follow-up hierarchical regression and simple slopes analyses conducted, where the organic variable components, structure and processes, were analysed as separate variables. These analyses revealed that Pd was a significant moderator of the relationship between a flat structure and flexibility. The flat structure variable was a positive predictor of flexibility only in low-Pd cultures.

The fact that the qualitative analyses were conducted separately for the organic variable components and that previous research suggested that structure and processes should be seen as separate variables (e.g., [30],[78], see also Chapter 3), motivated these quantitative additional analyses to better understand our main results pertaining to the organic variable.

These hierarchical regression analyses also revealed that decentralised processes showed a consistent, strongly negative and significant relationship to flexibility as well as all of the operational goals variables. Flat structure, on the other hand, demonstrated a positive tendency – albeit not significant – in its relationships to two out of three output measures. Hence, the negative relationships between the organic variable and the operative goals seem to result from the decentralised processes component of the construct.

Overall, the interviewees had a greater number of mixed views with respect to the factors related to structure and processes than they did with respect to the factors related to people and culture. Their opinions on the appropriate structure, role specialisation, flexibility, and how these variables affected effectiveness varied, while the responses for the other factors were relatively homogenous. One reason for this diversity may be that the NATO HQ had recently undergone a structural change. The change involved personnel reduction and a move from a less active role in peacekeeping, thereby possibly affecting the HQ's working processes and division of labour.

Drawing on other organisational research, what is considered to be the most efficient organisational structure, may vary with the degree of task complexity. Less complex tasks might be in need of a less organic or networked structure, whereas, more complex tasks might need a more networked structure [64]. Kosovo might entail less complex tasks than Afghanistan, for instance, and necessitate lower degrees of organic structures. This notion constitutes another alternative explanation for the surprising finding that a less organic organisation was related to greater flexibility and attainment of the operational goals.

7.2.2 People

The hierarchical regression models indicated that transformational leadership was a significant, positive, predictor of effective and timely decision making and information sharing within the HQ. The set of people variables (i.e., transformational leadership and rotation practices), entered second in the models, explained a moderate-to-large proportion (i.e., between 4% and 23%) of the variance in the output variables above and beyond that explained by the structure and process variables.

The interview results also reflected the importance of leadership and its links to the operative goals. The interviewees had a remarkably homogenous view of what constituted effective leadership and specifically mentioned the relationship between leadership and the operative goals. A leadership style that was included at a social level was seen to influence information sharing and decision making positively.

This finding resonates with previous research regarding leadership style. Previous studies suggest that military leaders are not merely engaging in planning and analytic thinking. Resteigne and Soeters (2009) [60], studying military leaders at Kabul Airport, found that they often act according to their intuition as well as spend a lot of time building interpersonal relationships. Besides the particularities described by the transformational leadership style, what is also specific to operational HQs is the environmental context and the need to be able to switch immediately from ordinary to crisis management and adapt their leadership accordingly.

Another people factor that the interviewees particularly emphasised was pre-deployment training as a means to reduce the loss in effectiveness caused by the frequent rotations of personnel. Interviewees also mentioned previous experiences and skills as vital to increased effectiveness. The people factor can be enhanced with other aspects of individual competence and training.

7.2.3 Culture

The hierarchical regression models indicated that team trust was a significant, positive, predictor of all of the output factors. Improvement orientation was also a significant, positive, predictor of shared awareness of tasks and responsibilities. The set of culture variables (i.e., team trust, improvement orientation, and openness to diversity), entered third in the models, explained a moderate proportion (i.e., between 4% and 11%) of the variance in the output variables above and beyond that explained by the structure and process and people variables.

The qualitative results suggested a similar positive relationship between team trust and information sharing. However, according to the interviewees, it is also possible for this relationship to be in the opposite direction, with more timely and effective information sharing leading to greater team trust.

With respect to the link between improvement orientation and shared awareness, it is important to note that, from the perspective of the literature on organisational culture cited in the theory section, it is emphasised that attitudes, such as improvement orientation, need to be shared within the HQ in order to lead to positive outcomes at an organisational level.

From the interviews, we noticed that operative goals impacted improvement orientation. Ilgen et al. (2005) [39] suggest models that focus on how team processes develop overtime should carefully consider the possibility that an output factor at one point in time may become an input factor at a later stage in the ongoing processes. This notion appears to support some of our empirical findings.

7.2.4 Summary of Main Findings

Our empirical investigation of the model showed that at least some of the input factors (i.e., flexibility, transformational leadership, and team trust) were important predictors of the output factors. Of note is that team trust reliably predicted all three output factors.

We gained additional insight into the variables and their relationships from the interviews. The qualitative results also alerted us to the notion that the direction of the relationships could be different from that expected. Additional theoretical developments are needed to delve deeper into how alignments or misalignments of input factors may affect the output factors.

7.3 LIMITATIONS

The greatest strength of this study resides in the fact that the theoretical model was developed and tested via a multi-method (i.e., qualitative and quantitative) approach.

We decided to limit our research to organisational effectiveness of Coalition's HQ implementing Non-Article 5 Crisis Response Operation and to focus on evaluation of internal processes in the HQ. Therefore, factors external to the organisation and to the context of the operation were not examined in this study. Its primary limitations concern the scope of the model, the relationships between the input factors, and the various contexts of its application. The model explicitly concentrates on the internal relationships between the input factors and operative goals. This might reduce its validity in terms of different environmental conditions. For example, the same relationships might not exist under other conditions.

In terms of the empirical scope of this study, we tested our model in the relatively peaceful Kosovo and the KFOR HQ. Other dynamics may be expected in a high intensity conflict situation HQ such as ISAF or in a static HQ such as Allied Command Transformation (ACT). Therefore, the conclusions we can draw from the empirical test of the model are limited to KFOR and other similar HQs only. However the overall model originated through SMEs having served in Afghanistan and so there is a relevance of the factors in various military missions.

As we conducted the study at only one point in time, we cannot infer causality. Future research should thus conduct an empirical test of the model in a longitudinal manner, where the direction of the relationships amongst the input factors and operative factors could be investigated over time. In this way alternative models of causality could also be tested.

Finally, the quantitative results are based upon a single (i.e., self reporting) method of data collection, which might reduce their validity. Moreover, we conducted hierarchical regression analyses despite the small size of the sample, which might have led to unstable regression coefficients and, obviously, low power to detect significant effects. The results should be interpreted with caution until future replication studies with larger samples are conducted.

7.4 IMPLICATIONS FOR PRACTICE

Several implications for practice can be drawn from this study. Although some of the implications focus on one variable in the model, it is important to understand that multiple variables are related to the implications. The implications are not ordered strictly in accordance with the model.

7.4.1 Congruence Between the Way People Are Used to Working and the Way the HQ is Organised

Discordant attitudes toward organisational structure and processes will likely depend on prior experience and expectations in terms of the characteristics of a mission. We found mixed opinions of organizing from our empirical findings. This could lead to misunderstandings with regard to how to collaborate within a HQ. To this, several modes of enhancing the congruence between the way people are used to working and the manner in which the HQ is organised can be suggested:

- Set clear, stable goals, and, tasks to ensure common understanding of mission end-states among coalition partners.
- Apply a comprehensive approach to doctrines and concepts to enhance the organisational effectiveness of coalition operations.
- Harmonise national and NATO education and training systems.
- Increase the level of NATO pre-deployment training.

- Minimise the capability and technology gaps among the coalition partners, and enhance the "technological interoperability" in national systems to improve information sharing and cooperation among the different contributing Nations in the coalition.
- Eliminate or minimise the restrictive national caveats in the employment of the troops during the operation as a means to enhance the coalition operation's effectiveness.

7.4.2 Leadership of an Operational NATO HQ Cannot Simply Assume the Staff Shares Common Attitudes

This concerns the structure and processes, people, and culture variables. Ensuring that every member of the organisation is minimally knowledgeable about those variables could be important to reduce the gap among different individuals with regard to common attitudes. Some suggestions to enhance common attitudes would be to:

- Get training in transformational leadership style.
- Moderate the impact of national caveats by a flexible leadership style.
- Understanding the planning process is necessary, but not sufficient for ensuring organisational effectiveness, leaders must take into account other variables (see model Chapter 3).

7.4.3 Managing Processes in a NATO HQ and the Rotation Process

One cannot assume that all HQ staff will receive the same level of handover/takeover information. This suggests that there are not always adequate levels of expertise among those starting to work in the HQ, which could hamper mission effectiveness. As pre-deployment training can vary and be difficult to change, expanding key leader training in the HQ to personnel other than the leaders could help train the HQ better. This could be included as a standard operating procedure in the HQ and best practices of key leader training can be drawn from NATO schools and HQs. Several points are related to managing the rotation process and the processes in a NATO HQ:

- Create cohesion and a common understanding by joint, multi-national, pre-deployment training when possible for all members of the organisation to include leadership.
- Adopt NATO standards as a must for all daily procedures.
- Harmonise the rotation timeframes among national positions in the HQ and synchronise the national rotations of troops to improve the organisational effectiveness of the multi-national formations.
- Build HQs as learning organisations – enhance mutual trust and confidence, encourage members of the HQ to freely express their opinions and beliefs.
- Improve the organisational knowledge trough a streamlined lessons-learned process in the multi-national HQs and military formations. Introduce an effective mentoring program to support handover procedures for the key command and staff positions in multi-national HQs.
- Establish a process of social networking and the development of informal networks as a key factor for improving organisational effectiveness and successful task accomplishment.
- Establish a clear and common understanding of HQ tasks and responsibilities.

7.4.4 Trust

Training programs to enhance teamwork and team trust could be necessary in order to foster information sharing. The U.S. Navy program has focused on informal processes for enhancing information sharing. Further research in the HFM-163 context in Bulgaria on U.S.-Bulgarian training might also give input on how to conduct such training. Besides training programs it could be necessary to encourage more dialogue

and more connections among the various NATO RTO Task Groups related to coalition issues and with the operational community.

7.4.5 Reducing the Challenges of a Multi-National Context

When training for operational requirements, personnel should be trained in a multi-national context, in that, the teams that will be working together in deployment should also train together.

The NATO school key leader training may accommodate this. This needs to follow training requirements. In addition, the expectations individuals have toward the mission and the kind of organisation they prefer needs to be taken into account. Several points could be used as a starting point to include individuals in a multi-national HQ.

- Integrate the cultural adaptability education and training as a necessary pre-requisite to take a NATO assignment. Some tools already exist (See for example GLOBE SMART COMMANDER; www.defenseculture.org).
- Strengthen the role of the leadership in order to ensure, commitment to the mission, as a factor that shapes the organisational culture in the HQ.
- Harmonise the different leadership styles within the multi-national HQ.
- Enhance the individual, organisational, and national trust among coalition partners.
- Establish strict qualification criteria for the manning of multi-national HQs, including language proficiency to improve the contribution of all national individuals.
- Enhance the cultural awareness training of the personnel, participating in NATO multi-national operations, and the development of intercultural competences to improve the organisational effectiveness.
- Improve cross-cultural education and training, and build intercultural competencies among the NATO HQ staff.
- Facilitate to the maximum extent the information sharing as an enabler of organisational effectiveness within a coalition HQ.

7.4.6 On Diagnosing the Need for Implementing Advice

In implementing any advice for a specific HQ, it is necessary to identify the specific needs of the HQ. In order to achieve the goal of identifying these needs, the survey and interview guide that was employed in this study can be used in combination with other methods such as observation of the HQ, after action review in the HQ, knowledge of the HQs strategic political goal, etc. It is important to note that in any assessment, additional factors than those explicitly studied might impact the decisions that the personnel are able to make. This could include other such factors as the size of the HQ, staffing, and mission specific factors such as the operational environment. It is also important to note that reliable and valid measurements, or detailed observation, should be employed if possible to ensure that adequate data is gathered for the analysis.

7.5 FUTURE RESEARCH

Our research highlights several areas for further research. Some of these areas relate to the method employed, whereas, other areas highlight the need for further elaboration of the model.

With respect to the methodical aspects of this study, there needs to be further studies of this type to validate the model, and there is a need to develop an instrument which can be administered to other multi-

national settings. This can be done by replicating the empirical study at ISAF HQ and the operational entities which are under command of the HQs of NATO.

Performance measures should be examined in order to further test the validity of the model proposed in this study. These performance measures can be quantitative in nature in addition to the qualitative reports. Definitions of perceived organisational and operational effectiveness among those of the subordinated HQs and forces, as well as, cooperating civilian organisations, local police and military, the local populace and local forces, can also aid in the testing of this model.

In addition to continuing this research from a longitudinal perspective, a fruitful avenue of exploration would be to apply or examine these findings within the context of different operational environments and within different coalition Joint Operations Commands (JOCs). In so doing, we can begin to identify, propose, and demonstrate solutions to coalition interoperability inefficiencies due to human factors, technology, personnel, and procedural characteristics of coalition JOCs.

Several factors related to the commander's role should be taken into account in further research. For example, the different interpretations of effectiveness of various commanders, the commander's role in creating a suitable organisational structure, the effect of change of commander, trust as it is developed by different commanders, as well as the commander's role in enhancing information could be examined further. In addition, flexibility in relation to different environments, knowledge of own troops as a precursor to decision making, information sharing across boundaries, and how rotation processes may or may not impair learning are topics for further elaboration.

The operational environment can be included in future models along with other tactical forces, civilians, and adversaries. Other cultural dimensions such as Pd, time orientation, and national culture differences can be included in future refinements of a model and empirical testing. This could shed some light on some of the surprising findings in the model. Based on the qualitative findings some of the variables can be refined in future models in order to fit NATO HQ even better. It should also be mentioned that the direction of the relationships should be fully explained in future research, as it was not made clear in the empirical testing undertaken so far.

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Annex A – RESULTS FROM SMEs FOCUS GROUP DISCUSSION AT NATO SCHOOL, OBERAMMERGAU, GERMANY DURING THE HFM RTG-163 MEETING, 22-24 OCTOBER 2008

Subject-matter experts from the NATO School, Provincial Reconstruction Teams in International Security Assistance Force (ISAF) as well as Joint Forces Command Brunssum joined the group. **The discussion highlighted the following barriers to organisational effectiveness at NATO HQ:**

- Different perspectives.
- Right experience for the right job.
- Training attendance is lacking.
- Language barriers in translating commander's intent into action.
- Lack of shared goals:
  - PRTs are National assets and may have different goals.
  - NGOs may have different goals.
- Interactions among individuals (i.e., different meal schedules, different national policies on alcohol use).
- Lack of coordination – though it appeared that goals of HQ leadership were well-understood:
  - Problem is not higher-level leadership, it's lower level execution.

The session identified the following barriers to organisational effectiveness in ISAF HQ: (all but the first two were also identified in SFOR, BIH):

1) Rapid turnover of leadership and personnel.
2) Lack of adequate manning.
3) Differences in national and coalition definition of effectiveness.
4) Tour length too short (typically 4 – 6 months):
   - Learning takes a long time to develop the social network, then you are getting ready to come home.
5) National rotations are not synched:
   - Strike Force NATO was successful because the group trained together.
6) War-fighting ethos where mission is peacekeeping.
7) Different national work ethics:
   - Meal times created conflicts.
8) Team leaders have responsibility but no "real" authority:
   - No one could be disciplined, must rely purely on positive tactics.
9) No negative consequences tolerated (see above).
10) Personnel selection:
    - Perception that some nations never contribute, but merely ride out their time.
    - Frequently, individuals are not qualified for their assigned role (Nations have a commitment to fill a slot, and fill they do).

11) Language:
    - Native English speakers have difficulties with non-native English speakers.
    - Non-native English speakers often do not comprehend the meaning or context of English speech.
    - Native English speakers sometime assume incompetence on the part of non-native English speakers.
12) Lack of organisational knowledge because lessons learned are not systematically passed on:
    - There was no debriefing for many personnel returning from a NATO assignment!
13) Culture of fear for making incorrect decision.
14) Lack of technological interoperability in national systems (hampers information sharing).
15) Nation-Centric politics result in restrictive caveats (this was a major influence!):
    - Troops are forced to work around these political barriers, which at times increases the immediate risk on troops.
16) Personality conflicts.
17) Lack of individual, organisational, national trust.
18) Competing national doctrine.
19) Lack of NATO pre-deployment training.
20) Unclear NATO doctrine.
21) National symbols versus one NATO symbol.
22) U.S. dominance in pushing the "American" way of doing business.
23) National perception of women being less capable than men.
24) Intended organisational structure was no there in practice:
    - Commanders change it to how they want it.
25) Ghost structure created by senior national representatives.
26) National social communication networks.
27) National differences in understanding of on non-kinetic side of operations.

The discussion identified the following enablers of organization effectiveness:

1) No single Nation predominantly represented on HQ staff.
2) HQ staff with prior experience working together as a group.
3) Informal networks (i.e., social) are key to task accomplishment.
4) Pre-deployment training on how to work in NATO/coalition environment.
5) Need to be more NATO-oriented than Nation-oriented.
6) NATO standardization for education and training for coalition operations.
7) Elimination of national caveats. This challenges trust among Nations.
8) Pushing for development of NATO identity.

SME suggestions for improving organisational effectiveness:

1) Extend all Nation's tours of duty to 12 – 18 months (as opposed to the typical 4 – 6 months).
2) Staff as planned.
3) Train together.
4) Create many ice-breakers/social events (first day ice breakers need to be followed up on).
5) Eliminate political caveats for mission execution.

Annex B – RESULTS FROM SMEs FOCUS GROUP DISCUSSION AT NATO ALLIED COMMAND TRANSFORMATION, NORFOLK, VA, USA DURING THE HFM RTG-163 MEETING, 7-9 JUNE 2009

The questions are in bold and the SME responses can be found below.

1) How do SME (operational level) define "Organisational Effectiveness?"

- Ability of the organization to assimilate disparate inputs whatever the source and whatever the input, chew through that, and translate to use available tools from the whole realm, lethal or non, and address mission using resources effectively:
  - Data fusion is one aspect – but you need to able to do something with it – must be actionable.
  - Must be able to make a decision quickly.
  - Must relate to some desired effect.
- Provide orientation for the commander; job of HQ is to procure for the commander but can be commander at any level or geo political.
- Ability to learn from mistakes and quickly adjust to the situation:
  - Adaptability to change.
- Ability to turn emergency situations to be ordinary.
- Common formats/capabilities/standardization:
  - Help people pick up the lingo.
- Ability to spare people's time (decision makers as well as soldiers):
  - Biggest thing is reducing the time it takes to produce information for sharing with others.
- Open minded to people you work with.
- Ability to go beyond task description:
  - Take initiative.
- Good leadership is critical to organisational effectiveness:
  - Good leadership – won't solve all problems, but need leader to be strong and be able to listen to people.
  - Can make the best of a bad situation.
  - Not completely leader-centred.

2) What do you believe are the top three things that disrupt organisational effectiveness that you'd like to see us address?

- Bad leadership:
  - Micromanagement.
- Business processes.
- Lack of communication/poor information sharing:
  - People not wanting to share information.
  - Lack of social networking opportunities.

    - Lack of info sharing systems.
    - Lack of understanding of team members' information needs.
- Conflict of interest – organisational and personal.
- Lack of standardized processes.
- Lack of priorities.
- Lack of resources – time and/or money.
- Conflict.
- Different tour length:
    - Turnover, no handover.
- Leader committed to Nation, not the mission.
- Lack of willingness to make decisions.
- Different IT systems.
- Different service cultures.
- Different national cultures.
- Cliques.
- Time wasters.

3) From your experience what makes an effective multi-national HQ?

- Someone who can make a decision needs to be able to prioritize conflicting items:
    - Same in both static HQ and operational; level of intensity may be different.
- Information sharing – ranges from people not wanting to share to technical lack of common system; the more understanding of where info comes from the better.
- Cultural education.
- Preparation of staff:
    - Good to know people before you get there – clarify roles, expertise.
- An unreserved commitment from the senior officer that the HQ will be effective; the leader is not there to serve Nation but to make HQ work:
    - Effective mentoring program – handover procedure so you don't start from scratch every time; learn from mistakes.
- Social networking is very important – green beads café:
    - Ad hoc meetings in open environment in multicultural settings.
    - Create opportunity for people to talk to each other informally.
    - Officer's club – opportunity or environment for social networking.
- Standard Operating Procedures (SOPs) for transition:
    - Avoid gaps of transition.
    - Different rotation cycles hurt org effectiveness.

4) How do you know if you are doing a good job (e.g. How many people were not involved in violent events?)?

- Informal feedback:
  - View of leadership from other HQs that you interact with.
  - Commanders' opinion is very useful.
- Have you accomplished the deliverables you said you would?
- Being able to see what I do contributes to the goals and mission of the organization – watch out for disconnects or conflicting goals:
  - Most projects here are long-term – won't see results right away.
- 360 degree feedback – good if done right and used as one of multiple assessment methods – we need an organisational 360 degree feedback system.

5) What are proxy measures of organisational/mission success? Largely similar to #1 and this was done mostly ad hoc following the interviews.

- Timeliness of decision making.
- Actionable data.
- Learning organization.
- Openness to culture.
- Adjusting to new situations.
- Make emergency situation into "normal" situation.
- Common language/terminology.
- Common formats/standardization.
- Go beyond task description.
- Adaptability.
- Establishing priorities.
- Leadership.
- Information sharing.
- Open mindedness.
- Do whatever job needs to be done.
- Ability to spare peoples' time.
- Effective turnover/rotations.
- Common doctrine.
- Awareness training.
- Maximizing resources of org.
- Data fusion.

We provided the group with the organisational effectiveness model developed by the group and sought comments on it.

- Confidentiality is key:
  - But … people will be willing to tell us data.
- Start the assessment early – tell them you are there to help them improve:
  - Sell yourself (what is your intention).
- Context where interview occurs is important – may get different answers depending upon environment – need people to assess for 3 months – be able to get to know people within the HQ.

The group was asked to rank order the importance of the dimensions in the model.

- Organization – #1; Leader = #2; Team = #3; Team Member = #4; Context = #5; Task = #6; Situation = #7:
  - Under organization – rank importance of sub-components as structure, processes, strategy, resources, goal congruence, culture.
  - Organisational culture relevant – could be moved up.
- Should we look at effectiveness from "the outside in" – make recommendations to policy maker or from the "inside out" – recommendations about processes that could be implemented that would help them to optimize resources – have to do it both and keep them in balance but balanced with the freedom of manoeuvre the organization you are examining has – no point in making recommendations that you can' impact, inside out is more achievable, both could be effective if you take approach of a mentor and be able to share in a non-punitive way how to improve.
- Reading the concept definition misses the relation with people on the ground – that should be the focus – from a business perspective are analyzing Headquarters but people on the ground are critical – people on the ground are doing task provided with and org structure facilitates the action on the ground – HQ ultimately work for the boots on the ground.

Annex C – IMPROVING THE ORGANISATIONAL EFFECTIVENESS OF COALITION OPERATIONS

Paper presented at the Symposium SAS-081/RSY on "Analytical Support to Defence Transformation" in Sofia, Bulgaria, 26-28 April 2010

Esther Bisig
Swiss Military Academy at ETH Zurich
Kaserne Reppischtal
8903 Birmensdorf
SWITZERLAND

Esther.Bisig@vtg.admin.ch

Ann-Renée Blais
Defence R&D Canada (DRDC)
1133 Sheppard Avenue West, P.O. Box 2000
Toronto, Ontario M3M 3B9
CANADA

ann-renee.blais@drdc-rddc.gc.ca

Tineke Hof, MSc
TNO Defence, Security and Safety
Kampweg 5, P.O. Box 23
3769 ZG Soesterberg
NETHERLANDS

Tineke.Hof@tno.nl

Stefan Seiler
Swiss Military Academy at ETH Zurich
Kaserne Reppischtal
8903 Birmensdorf
SWITZERLAND

Stefan.Seiler@vtg.admin.ch

Tibor Szvircsev Tresch
Swiss Military Academy at ETH Zurich
Kaserne Reppischtal
8903 Birmensdorf
SWITZERLAND

Tibor.Szvircsev@vtg.admin.ch

Yantsislav Yanakiev, D.Sc.
Defence Advanced Research Institute
G.S. Rakovski National Defence Academy
82 Evlogi and Hristo Georgievi Blvd
1504 Sofia
BULGARIA

yanakievy@md.government.bg

ABSTRACT

Transformation of military operations demands new tools to support the performance of coalition forces in multi-national operations.

This paper contributes to one of the fundamental objectives of SAS-081/RSY, namely to the objective to share experience from the implementation of methods and tools and latest research results in support of transformation and management in the new security environment. In addition, it focuses on the cognitive and human aspects of defence transformation.

***The goal of the paper** is to investigate potential models and tools for understanding, explaining, and measuring organisational effectiveness of coalition HQs conducting Non-Article 5 crisis response operations.*

The paper will present intermediate results of the work of NATO RTO HFM Task Group (TG) 163 "Improving the Organisational Effectiveness of Coalition Operations", which is composed of researchers from 11 Nations (i.e., eight NATO, two PfP and one MD). In addition, NATO ex-officio bodies are represented in the group (i.e., NATO Defence College, NATO School SHAPE and NATO SACT).

***First,** HFM RTG 163 organized Subject-Matter Experts (SMEs) discussions at NATO School SHAPE and at NATO Allied Command Transformation to define the term "organisational effectiveness" of coalition HQs at the operational level and to categorize factors critical to organisational effectiveness.*

Second, *the TG drafted a theoretical model of organisational effectiveness, based on the results of SMEs discussions, a literature review of the relevant models and variables, as well as products other NATO RTGs had developed; for example, the CTEF Model developed by HFM-087, and the Network-Enabled Capability (NNEC) C2 Maturity Model developed by SAS-065. The model implies that most important for organisational effectiveness is strategically aligning Structure, People, Processes, and Culture towards the organisation's operative goals, which are:*

a) Effective and timely sharing of information;

b) Quick and timely decision making; and

c) Improved shared awareness of tasks and responsibilities.

Third, *based on this theoretical model the TG developed a draft instrument (i.e., questionnaire) for data collection that can be used to:*

1) Investigate the impacts of different influencing factors;

2) Localize inefficiencies in NATO Headquarters (HQ); and

3) Determine measures to achieve better organisational effectiveness of coalition HQs.

C.1 INTRODUCTION

The end of the Cold War implicated downsizing the number and pruning the budget of armed forces. Simultaneously, the number and tasks of missions escalated due to the unblocking of the UN Security Council. Nowadays, missions range from peacekeeping, peace enforcement, anti-terrorist action, policing, to humanitarian aid [23],[42]. Furthermore, the changing security situation (e.g., attacks of the 11 September 2001) showed that neither do national borders adequately protect against external threats nor does geographical distance play a significant role in the security-political analysis of a state [29]. Consequently, multi-national alliances and cooperation between armed forces of different Nations are more important today than ever before.

However, this "internationalization of military life" [30] in the last twenty years has led to new organisational challenges, too. The collaboration of forces with different weapons, information and communication systems requires not only technological interoperability, but their national background with different languages, leadership styles, rotation systems, trainings, military traditions, hierarchy systems and so forth also demand a high level of non-technical interoperability. Thus, the interaction of a complex socio-technical system where structure, processes, people, and culture are aligned towards goal achievement is essential to fulfil missions successfully and effectively. Though, the multi-nationality of these coalition operations impedes their organisational effectiveness.

In order for these operations to achieve and maintain their organisational effectiveness at a high level, adaptive, flexible, and mobile forces are needed [11]. NATO meets this challenge by a transformation process emphasizing "reduction in size and readiness", "increasing flexibility and mobility", and "multi-nationality" [35].

This paper ties in with the above-mentioned issue of multi-nationality and investigates potential models and tools for understanding, explaining, and measuring organisational effectiveness of coalition Headquarters (HQ) conducting Non-Article 5 crisis response operations. Its aim is also to provide a theoretical basis for the formulation of recommendations regarding how to improve their organisational effectiveness. It is the result of the work of NATO Research and Technology Organization (RTO) Task Group HFM-163 "Improving Organisational Effectiveness of Coalition Operations", which is composed of researchers from 11 Nations (i.e., eight NATO, two Partnership for Peace and one Mediterranean Dialogue country). In addition, several NATO ex-officio bodies are represented in the group (i.e., NATO Defence College, NATO School SHAPE and NATO SACT).

The goal of this paper is:

1) To define what military experts mean by organisational effectiveness;
2) To outline the existing theories and models of organisational effectiveness;
3) To assess how these models can be combined to form a new model of organisational effectiveness of peace-promoting multi-national operations' HQs;
4) To investigate which factors influence this effectiveness; and
5) To understand how effectiveness can be measured.

C.2 ORGANISATIONAL EFFECTIVENESS

C.2.1 Definition

Generally speaking, the term organisational effectiveness describes the degree to which an organisation reaches its goals [17]. This section of the paper addresses how experts in the military field fill this broad definition of the term organisational effectiveness with HQ-specific content. It presents the analysis of the results obtained from Subject-Matter Experts (SMEs) discussions carried out in the framework of the Task Group HFM-163 in NATO School, Oberammergau, Germany in October 2008 and in NATO Allied Command Transformation, Norfolk, VA, USA in June 2009. The two groups of SMEs comprised commissioned officers with diverse national backgrounds and with extensive experience in multi-national NATO operations, including the International Stabilization and Assistance Force (ISAF) HQ. The objective of the SMEs discussions was three-fold:

1) To help define the term organisational effectiveness of NATO coalition operations;
2) To identify barriers to organisational effectiveness of NATO HQs at the operational level; and
3) To summarize suggestions for improving organisational effectiveness of multi-national NATO HQs.

The experts described the effective coalition HQs as "able to achieve the goals", "able to make a decision quickly", "providing orientation for the commanders", "having good leadership", "adaptable to change", "adjusting quickly to the changing situation", "able to learn from mistakes", "producing information for sharing with others", "able to go beyond task description and taking initiative" and "open to diverse cultures".

The factors influencing organisational effectiveness of coalition operations that act as barriers for successful cooperation, according to the SMEs, can be clustered in four groups:

- The first group contains factors related to *political-military decision making*. Among the most frequently mentioned problems are "unclear and unstable goals, changing tasks, and lack of common understanding of goals and missions end state" among the coalition partners. In addition, according to the experts, the "lack of a comprehensive approach to doctrines and concepts" is a major problem. Another important issue is "different national and NATO education and training systems and different amounts of experience in multi-national operations". The experts agreed "there is still a lack of NATO pre-deployment training". Moreover, a traditional barrier to organisational effectiveness of coalition operations is the capabilities and technological gap among the coalition partners as well as a "lack of adequate resources allocated to implement the mission". Among many other important challenges, the "lack of technological interoperability" in national systems hampers information sharing and creates difficulties for cooperation among the different contributing Nations in the coalition. Last, SMEs considered "nation-centric politics, related to imposing restrictive caveats to employ the troops during the operation" as a major negative

influence on the coalition operation's effectiveness. The problem is that "the troops are forced to work around these political barriers, which at times increases the immediate risk to the people on the ground and undermines the trust among coalition partners".

- The second group includes factors related to *processes management* in NATO HQ. Among the most frequently discussed issues were "different rotation timeframe among national positions in the HQ" and "the lack of synchronisation of national rotations". In this regard, experts concurred "different rotation cycles hurt organisational effectiveness", creating difficulties in the adaptation among the national representatives and in the development of social networks. In addition, some of the experts identified as a problem the "rapid turnover of leadership and personnel" hampering the learning process. Some of the experts considered "the tour of length too short" (typically 4 – 6 months) and argued that "learning takes a long time to develop, as does the social network, and then you are getting ready to come home". On the other end, a few SMEs mentioned that "most of Nations prefer comparatively short periods of rotation because of the high intensity of the operations related with high stress to military personnel". Obviously, this is a problem deserving of particular attention and additional investigation. The next important barrier to organisational effectiveness according to SMEs is the "lack of organisational knowledge because lessons learned are not systematically passed on". This relates to the organisation of the process of hand-over of the positions in the HQ and the willingness of the representatives of different Nations to share information with their successors. From a national standpoint, the experts considered problematic the fact that "there is no debriefing for many personnel returning from a NATO assignment". Another important barrier to effectiveness of coalition HQs according to the experts has to do with a "lack of communication and poor information sharing process". The problems here are multi-dimensional, technological and human in nature. Some typical situations include "people not wanting to share information", "lack of social networking opportunities", "lack of info sharing systems" and "lack of understanding of team members' information needs".
- The third group of factors allude to the *people* in the organisation. One of the most important barriers according to the experts is the "lack of adequate manning". The SMEs shared the opinion that "frequently, individuals are not qualified for their assigned role" and that "some Nations never contribute, but merely ride out their time". This situation generates problems with respect to a reasonable distribution of tasks and responsibilities among collation partners as well as to the development of internal social networks in the HQ. Another concern is the "lack of cultural awareness training" of the personnel, participating in NATO multi-national operations. Related to this issue is "the quality of English communication". The problem is multi-faceted. On the one side, "non-native English speakers often do not comprehend the meaning or context of English speech". On the other side, "native English speakers also have difficulties with non-native speakers and therefore, sometimes assume incompetence on the part of non-native English speakers. Another problem is the use of NATO abbreviations and so-called "NATO slang", which further hinders communication.
- Finally, the fourth group of factors relates to the influence of *cultural differences* on organisational effectiveness and the process of formation of a unique organisational culture in the NATO HQ. The experts described the organisational culture of a NATO HQ as a mixture of different national, military and service cultures affecting its organisational effectiveness. A typical example in this regard is "the mental process of uncertainty overcoming", related to cognitive culturally-based biases in the need for information to make a decision. This process may affect decision making if an individual needs more information or is afraid of making an incorrect decision. Both cases can undermine organisational effectiveness of the HQ. Another essential issue is "the effect of different leadership styles" (e.g., direct vs. indirect) which can lead to a misunderstanding or misperception of the intention of the leader. The experts were unanimous with respect to the role of leadership as a factor that shapes the organisational culture in the HQ and thus influences effectiveness of coalition operations. The role of the leader and specific leadership capabilities in a multi-national

environment are critical factors regarding establishing shared vision and awareness with respect to goals and tasks. In this regard, the experts suggested the "leader be committed to the mission, not to the Nation". Another factor which deserves attention, also influenced by different national cultures, is "task orientation versus the need to spend time building and maintaining relationships". Lastly, the experts identified as a potential problem the "lack of individual, organisational and national trust". The issue of trust among coalition partners deserves particular attention because it is related to information sharing and the coalition operations' effectiveness as a whole.

According to the experts, the enablers of organisational effectiveness include the improvement of processes in the HQ as well as strategic decision-making when planning and implementing a NATO operation. A few of their suggestions regarding the organisational structure and culture follow.

The first group of recommendations has to do with strategies for *processes improvement* in NATO HQs. The experts were unanimous regarding the role of information sharing as an enabler of organisational effectiveness of a coalition HQ as illustrated by the statement "the more understanding of where information comes from the better". In order to improve the information sharing process, a strategy for changing people's mind and attitude "not wanting to share" has to be implemented. A full-spectrum technical interoperability among coalition partners also has to be put in place. Another important enabler of organisational effectiveness of coalition operations is related to the development of the HQ as a learning organisation. The SMEs suggested "introducing Standing Operating Procedures (SOPs) in order to avoid gaps of changeover" and "to transfer lessons learned". In addition, they considered important to introduce "effective mentoring program to support hand-over procedure so you don't start from scratch every time" and to "learn from the mistakes" of their predecessors. Besides, the experts considered the "process of social networking" and development of "informal networks" as key elements in reaching organisational effectiveness. In this regard, they suggested "ad hoc meetings in open environment in multi-cultural settings" be organized, as well as the creation of "opportunities for people to talk to each other informally" such as ice-breakers / social events and the use of the officer's club for social networking. Moreover, SMEs rated among the most important factors that influence coalition HQs' effectiveness "an unreserved commitment from the senior leadership in the HQ". They agreed "the HQ will be effective if the leader is not there to serve the Nation but to make the HQ work". Having in mind the complex character of current NATO operations, SMEs identified the need for leaders to be able to prioritize conflicting items.

The second group of suggestions relates to improving the *strategic decision-making process of planning and conducting* a NATO coalition operation. Among the most discussed issues is the need to introduce "NATO standardization for education and training for coalition operations". The experts commented "HQ staff has to have prior experience working together as a group". In addition, they considered the "pre-deployment training on how to work in NATO/coalition environment as a must". Finally, SMEs deemed "elimination of national political caveats for mission execution" a priority task because "this challenges trust among Nations".

The recommendations of the SMEs with respect to *structural factors* that influence coalition operation effectiveness were focused on the format of cooperation (i.e., lead Nation – framework Nation – multi-national formation). They gave priority to multi-national cooperation, which was characterized by the statement "no single Nation has to be predominantly represented on HQ staff".

Finally, with respect to *culture*, the experts' suggestions had to do with improving the cross-cultural education and training and building intercultural competencies among the NATO HQ staff. In addition, they considered development of "NATO HQ culture", "pushing for development of NATO identity" and to "be more NATO-oriented than Nation-oriented" to be critical.

To summarize, at the beginning of the discussions, the experts did not distinguish clearly between the broad term "operational effectiveness", representing factors external to an organisation, and the term

"organisational effectiveness", targeting the internal capabilities of an organisation. Therefore, they focused on external preconditions for successful cooperation, namely political-military decision making regarding planning and participation in NATO coalition operations. In the course of the discussions, however, they agreed upon the description of the effective coalition HQ as an organisation with the basic characteristics summarized in Table C-1 below.

Table C-1: Basic Characteristics of an Effective Coalition HQ.

Political-Military Decision Making	Internal Processes Management	People	Cultural Differences
• Able to achieve its goals • Establishing priorities	• Learning organisation • Stimulating information sharing • The HQ is willing to adapt its structures to the ever-changing conditions where necessary • Processes improvement strategies implementation to facilitate information sharing, social networking and top leaders' commitment to achieving HQ goals • Making efficient use of the available resources	• Able to take initiative • The leaders are able to make fast and timely decisions • Existing flexible human resources management system to guarantee high motivation, cohesion, organisational and interpersonal trust	• Openness to diverse cultures; development of intercultural competences • Using common language and terminology • Using common formats/ standardization of different procedures • Using common doctrine and concepts

C.2.2 Review of Organisational Effectiveness Models and Approaches

After a brief description of the SMEs' recommendations, we now introduce theoretical approaches and existing models of organisational effectiveness. Based on these concepts, we designed a model tailored to coalition HQs. We describe and discuss three distinct models – the *Command Team Effectiveness (CTEF) Model* [16], the *Star Model* [19], and the *7-S-Model* [37] – and the *Internal System Approach* to organisational effectiveness and then adapt their conceptual ideas to our purposes.

C.2.2.1 Command Team Effectiveness Model

The Command Team Effectiveness (CTEF) Model [16] (Figure C-1) enables the observation, evaluation, and promotion of group activities. The model is based on the assumption that successful leaders have to understand and take into account the following factors:

1) Conditions (i.e., operation framework, task, organisation, leader, team members, and team);
2) Behaviour and processes occurring during the operation (a distinction is made between behaviour/ processes related to tasks and those related to groups);
3) Evaluating the result of these processes (again distinguishing between behaviour related to tasks and groups); and
4) As a result of After Action Reviews (AAR) adapting processes and conditions in order to become more effective.

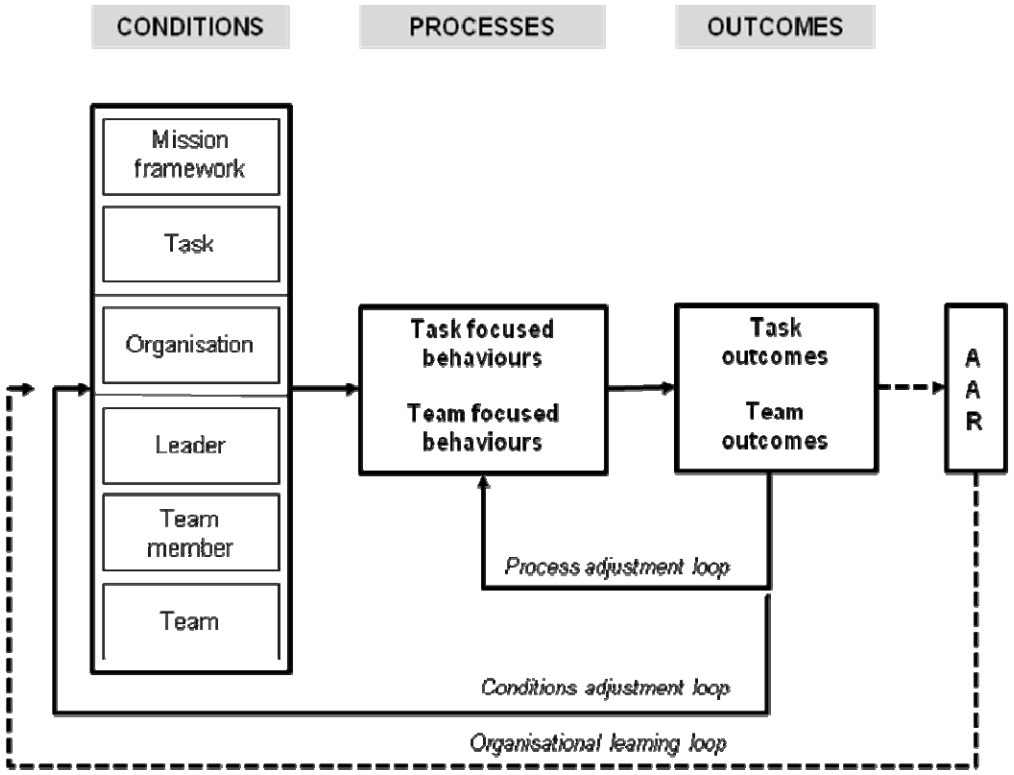

Figure C-1: CTEF Model [16].

This model was developed by a NATO RTO Task Group. Existing models were used as an inspiration to identify the different factors (e.g., [14],[39],[31],[10]). Moreover, articles and chapters on organisational effectiveness were consulted and interviews with experts were conducted.

The advantages of this model are its strong theoretical foundation, and the fact that it includes learning and adjustment loops and takes the mission framework and context into consideration. However, it lacks the (inter-)cultural aspects of multi-national operations. Additionally, its focus on team and task characteristics, does not match a HQ's perspective. At the HQ level, there are other vulnerabilities, for example, organisational culture and structure. Another drawback of the CTEF model is its complex cause-and-effect structure, which can only be verified partially in practice.

C.2.2.2 Star Model

The basic premise of Galbraith' Star Model [19] (Figure C-2) is simple but powerful: Different strategies require different organisations to execute them. The Star Model framework for organisational design is the foundation on which an organisation bases its design choices. This framework consists of a series of design policies that can be influenced by leadership and impact employee behaviour. The policies are the tools with which leaders must become skilled in order to shape the decisions and behaviours of their organisations effectively. In the Star Model, design policies fall into five categories:

- Strategy;
- Structure;
- Processes;
- Rewards; and
- People.

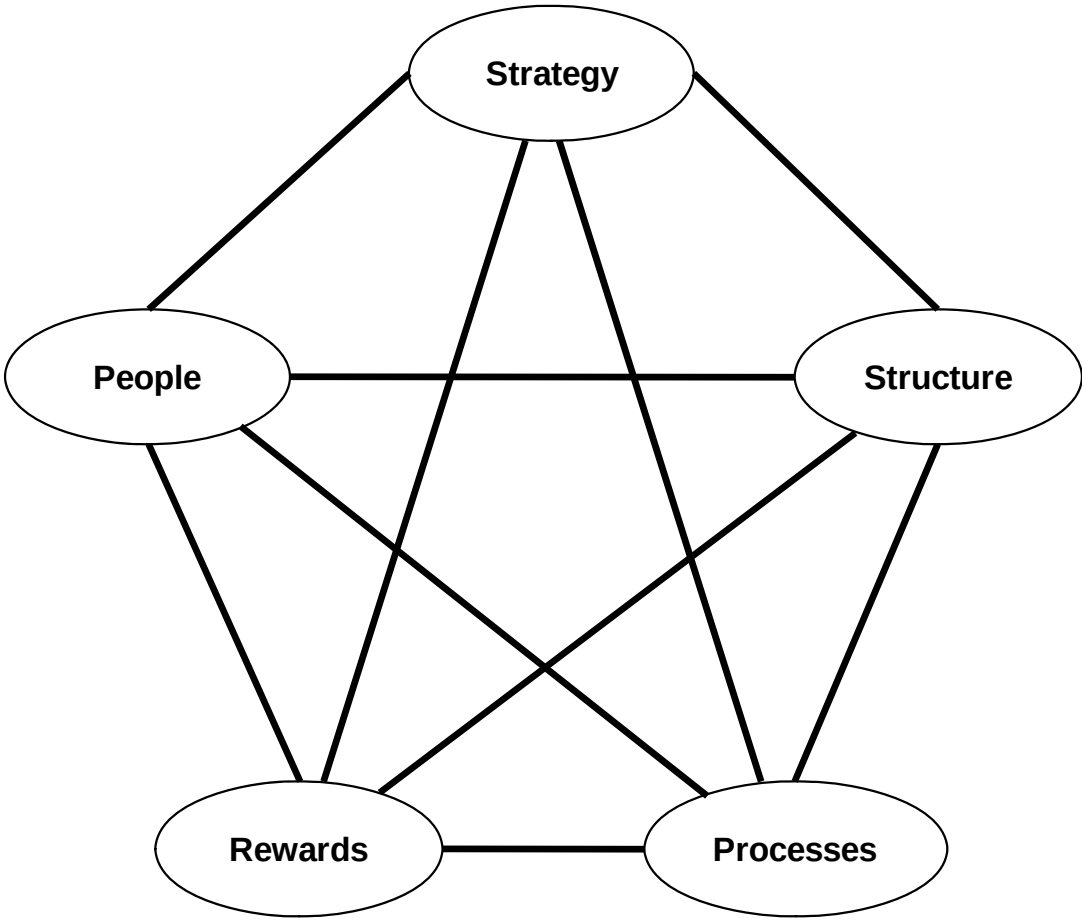

Figure C-2: Star Model [19].

In order to be effective as an organisation, all these policies must be aligned, interacting harmoniously with one another. This idea of alignment is fundamental to the Star Model. But to solely focus on aligning, the organisation is to become vulnerable, because alignment around a focused strategy can impede the adaptation of a new strategy. Today, every organisation needs to be adaptive and able to change as quickly as its context may change. If not, it risks falling behind. And if change is constant, an organisation needs to be designed so as to be constantly changeable. Organisational structures and processes have to be easily reconfigured and realigned with a constantly changing environment. This asks for the skilled use of extensive internal and external networking capabilities [19].

One advantage of this model is the concept of strategic alignment. This alignment of the diverse policies ensures goal-oriented functioning and therefore, organisational effectiveness. Another of its advantages is the consideration of the notion of adaptability to a constantly changing environment. Nevertheless, the Star Model is not tailored to the organisation of a NATO HQ – but rather to business and market-oriented companies. Other weak points are that effectiveness is not a direct output of the design policies and culture is only understood as an output, not as an input. For our purposes, that is, in a multi-national HQ where people from different Nations are working together, culture has to be seen as an input variable as well.

C.2.2.3 7-S-Model

The 7-S-Model of the former McKinsey management consultants Peters and Waterman Jr. [37] divide organisations into “hard” and “soft” factors. The “hard” factors cover concrete elements that can be exposed with policy papers, plans, and documentation on the development of the organisation. The three

"hard" or "cold" factors of an organisation are strategy, structure, and systems. The expression "soft" refers to substantially and only marginally concrete elements of an organisation that can hardly be described. These elements develop permanently and can be planed or controlled only limitedly because they are highly dependent on the members of the organisation. These "soft" or "warm" factors are namely skills, staff, style/culture, and shared values / superordinate goals (Figure C-3). While the hard factors are easier to test, the assessment of the soft factors is much more difficult, albeit they are at least as important for the organisation.

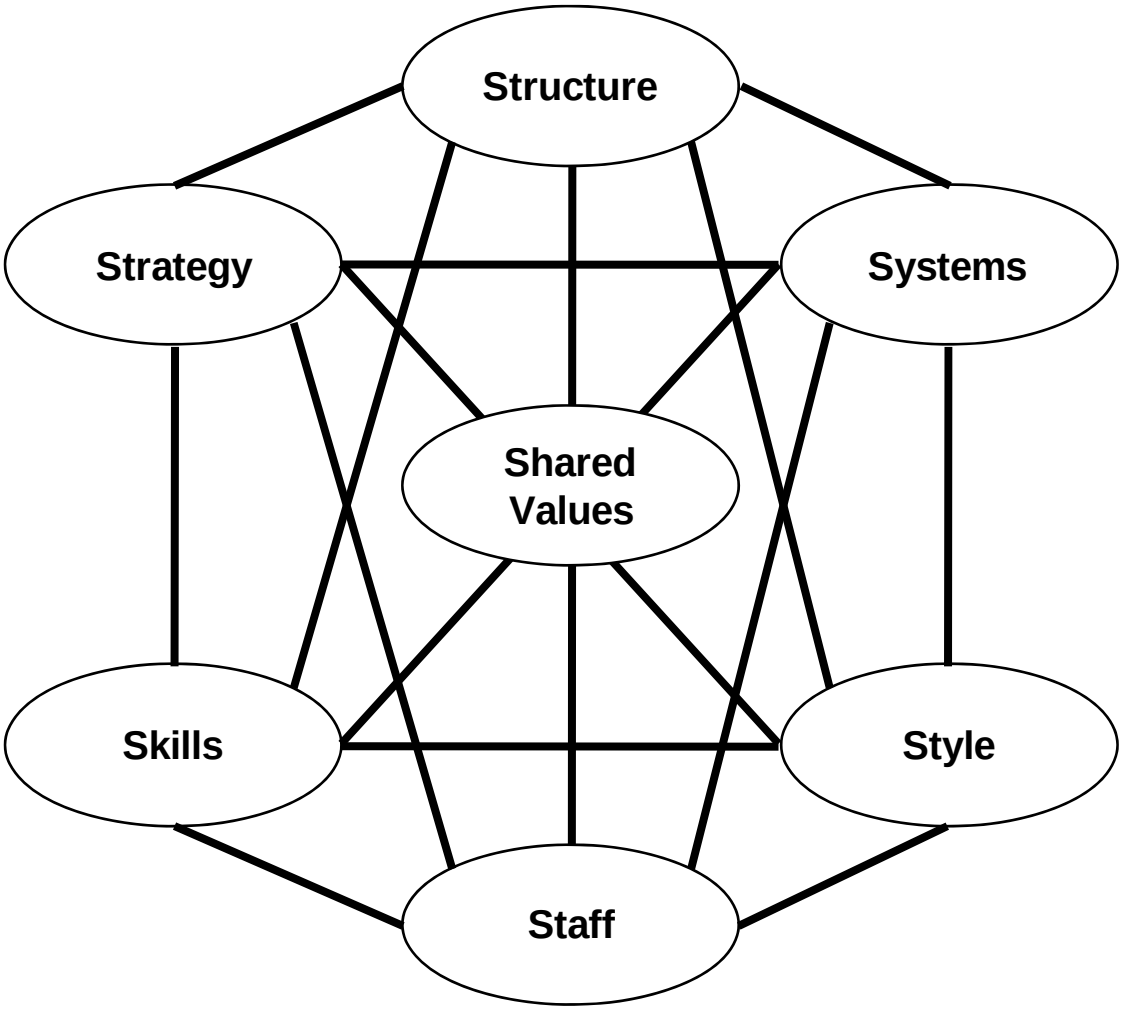

Figure C-3: 7-S-Model [37].

Effectively functioning organisations are characterized by a coordinated balance of theses seven factors. In times of change and adjustment, it should be noted that the modification of one factor also has an impact on the other factors. A well-functioning organisation must aspire to reach the right balance between the above introduced factors. In practice, it is often the case that leaders are only focusing on the hard factors. Peters and Waterman Jr. [37] argue, however, that the most successful organisations focus their attention also on the optimum balance of the soft factors as they can be decisive for success because new structures and strategies can barely be built on completely opposed cultures and values.

This praxis proven model has the advantage of taking into consideration hard as well as soft factors and emphasizing the importance of a balance between those factors.

C.2.2.4 Internal System Approach to Organisational Effectiveness

The internal system approach to organisational effectiveness examines the organisation's functioning from the inside. Effectiveness is assessed by indicators of internal conditions and efficiency, such as efficient use of resources and harmonious coordination between departments. Managers, therefore, generate goals that they can use to assess how well the organisation is performing. Jones [28] describes two types of goals that can be used to evaluate organisational effectiveness: official goals and operative goals. Official goals are the organisation's guiding principles that are usually formally stated in its annual report and in other public documents. Typically these goals describe the mission of the organisation – why does the organisation exist and what should it be doing. Operative goals are specific goals that put managers and employees on the right track as they perform the work of the organisation. Managers can use operative goals, such as reduce decision-making time, increase motivation of employees, or reduce conflict between organisation members, to evaluate organisational effectiveness. Organisations must be careful to align their official and operative goals and remove any tension between them [28].

C.2.3 Preliminary Conclusions on the Models

These approaches and models have different foci and cover different aspects of organisational effectiveness. The aim of this paper is to combine the aspects that are most relevant and applicable to the effectiveness of coalition HQs to form a new, tailored model.

Based on the analysis of the results from SMEs discussions and a literature review, we define organisational effectiveness in NATO HQs as the degree of fit, or alignment, among various dimensions of organisations such as organisational structure, processes, people and culture towards goal achievement. In addition, experts' discussions led us to the conclusion that the main (official) goal of a NATO HQ is to support the troops on the ground. Furthermore, we made a decision to evaluate the organisational effectiveness of NATO HQs by assessing the following operative goals:

a) Effective and timely sharing of information;

b) Quick and timely decision making; and

c) Improved shared awareness of tasks and responsibilities.

C.3 DESCRIPTION OF THE MODEL

From the most relevant conclusions from the expert's opinion and the already existing theory, we can state the following concepts and components of a new model for the organisational effectiveness of Non-Article 5 crisis response operations' HQs:

- Assessment of the internal effectiveness of the organisation;
- Distinction between operative and official goals;
- Three-step design with a direct link from the input factors through the operative goals to the official goal of the organisation;
- Concept of internal alignment which states that the input factors must be in optimum balance to result in effective goal achievement;
- Consideration of hard (i.e., structures, processes) as well as soft (i.e., people, culture) input factors; and
- Simple model that can be easily tested and applied in practice.

In an internal system approach, these requirements are combined to from a new HQ-specific effectiveness model.

C.3.1 Internal Alignment

Effective organisations make sure their operative and official goals are aligned both in terms of their fit with the external environment and with other factors internal to the organisation. In this section, we describe the NATO HQ's internal factors that have to be aligned with its operative and official goals.

Our definition assumes the mission of NATO HQs is to support the troops on the ground. This mission can be attained by increasing effective and timely information sharing and decision making, and improving shared awareness of tasks and responsibilities. Previous research on organisational effectiveness revealed that structure, people, processes, and culture must be aligned towards these operative goals in order to effectively reaching the main goal [38]. So, NATO HQs have to make sure that the choices made regarding the NATO HQ's structure, processes, people, and culture support accomplishing the operative goals:

a) Increasing effective and timely sharing of information;

b) Increasing effective and timely decision making; and

c) Improving shared awareness of tasks and responsibilities.

Figure C-4 shows this hypothesized process.

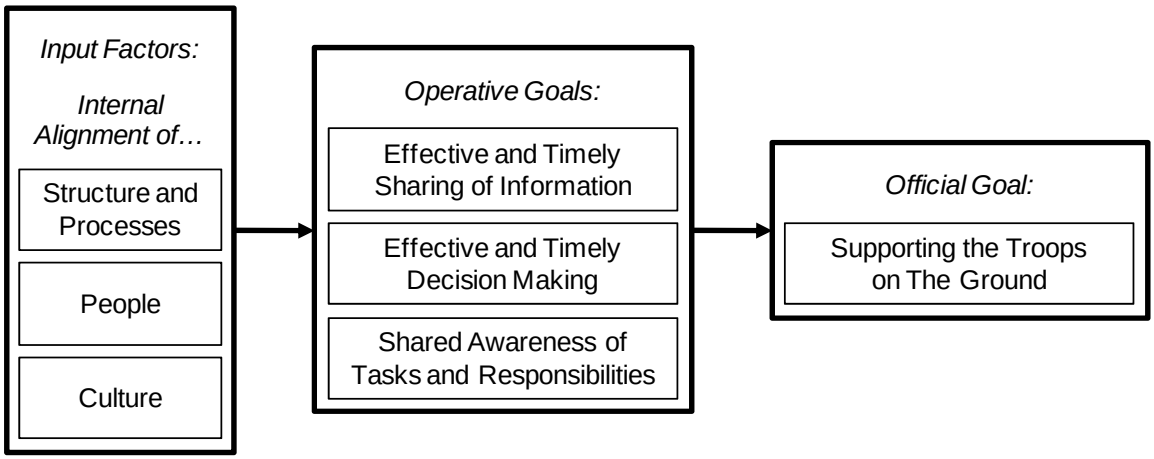

Figure C-4: Model of Organisational Effectiveness of Non-Article 5 Crisis Response Operations' HQ.

In the following paragraphs, we describe the three factors that have to be internally aligned to support achieving the operative goals.

C.3.2 Structure and Processes

Organisational structure is the formal system of task and authority relationships that control how people coordinate their actions and use resources to achieve organisational goals [28]. Organisational structure shapes the behaviour of people and the organisation. Organisational processes refer to the way the organisation implements its goals in the framework of the given organisational structure [37]. That is to say that processes cut across the organisation's structure; if structure is thought of as the anatomy of the organisation, processes are its physiology or functioning [19].

The environmental circumstances in which military forces have to operate are changing. Therefore, it is necessary to implement organisational changes, for example, NATO Network-Enabled Capabilities

(NNEC). The military needs to change into an organisation that supports agility, flexibility, jointness and interoperability. An organisational design that fits the transformed military organisation is the network organisation design. A network organisation is an organic organisational structure. Jones [28] summarizes important aspects of organic structures: Organisations with an organic organisational structure are decentralized. They have an organisational set up whereby the authority to make important decisions is delegated to persons at all levels of the hierarchy. An organic structure stimulates flexibility, so that employees can innovate and quickly adapt to changing circumstances, and take responsibility to make decisions when necessary. Roles are loosely defined; organisational members with different functions work together to solve problems and are involved in each other's activities. A high level of integration is needed to enable organisational members to share information quickly and easily. Rules and norms emerge from the ongoing interaction between organisational members. Interaction between organisational members is horizontal as well as vertical.

We assume that for NATO HQs to be able to reach its three goals (i.e., increasing effective and timely sharing of information and decision making, and improving shared awareness of tasks and responsibilities) its organisational structure and processes must be classified as organic (as opposed to mechanistic). The greater the degree to which the NATO HQ's organisational structure and processes resemble organic structure and processes, the more likely it will be to reach its operative goals.

C.3.3 People

The element "People" is central to the effectiveness of an organisation, and therefore a key factor in many effectiveness models (e.g., [19],[37],[16]). Following upon the experts' feedback, we concentrate on the sub-factors leadership, rotation and training.

The SMEs indicated the effectiveness of HQs is mostly a matter of the style of leadership. In numerous studies, Bass and Avolio [4] examine the impact of leadership style on effectiveness. They state that in a transformational style of leadership, the leader enhances the motivation, morale, and performance of his followers through focusing on 'transforming' his followers to help and look out for each other, to be encouraging and harmonious, and to look out for the organisation as a whole.

We assume that for the NATO HQ to be able to attain its three goals (i.e., effective and timely sharing of information, quick and timely decision making, and improved shared awareness of tasks and responsibilities) its leadership must be classified as transformational (as opposed to transactional). The greater the degree to which the NATO HQ's organisational leadership resembles transformational leadership, the more likely it will be to reach its operative goals.

Training is another key contributor to organisational effectiveness. The lack of attendance in NATO pre-deployment training on how to work in coalition operations can be an important barrier to organisational effectiveness in NATO HQs. Without training, individuals show a lack of competencies, do not know each other, and they have not had the chance to clarify their roles and expertise before starting working together. We are interested by whether and how much pre-deployment training affects individuals' knowledge, skills, and other behaviours, namely information sharing, decision making and shared awareness of tasks and responsibilities. Training is most likely to have a significant impact on such outcomes when delivered within a job-specific and skills-focused context. A very important aspect of NATO pre-deployment training is the process of teambuilding, as teams in multi-national HQs are characterized by high heterogeneity. Overall, research on diversity and heterogeneity of teams and their effectiveness has led to inconsistent results (cp. literature reviews in: [27],[40],[48]). While some authors have discovered better solutions and performance with increasing diversity, because heterogeneous teams possess richer perspectives and greater potential (e.g., [46],[50],[34]), others have demonstrated poorer integration and dissatisfaction with increasing cultural diversity which in turn negatively impacts the team's effectiveness (e.g., [25],[36],[49]). Thus, heterogeneity seems to influence team effectiveness via

multiple, simultaneous factors [2],[15],[26] which can be either performance enhancing (e.g., diversity and creativity of generated solutions) or reducing (e.g., low cohesion). It is therefore extremely important that pre-deployment training promotes team cohesion so that the innovative and creative potential of its heterogeneity can be exploited. The future team members normally know which task they will be performing (i.e., functional dimension) and where they will be located in the HQ's hierarchy (i.e., hierarchical dimension) during deployment. However, they cannot position themselves within the team or organisation (i.e., central vs. peripheric position) until deployment [24]. Without integration, they cannot embrace the interpersonal activity that leads to collective strength and shared awareness, thus the participation of each member is crucial and should be encouraged as early as during pre-deployment training [3]. At that point, future team members develop shared perceptions, attitudes, and values leading to shared interpretations and understanding. Thereby, potential misunderstandings in the daily cooperation are reduced [47]. The more heterogeneous is a team, the longer its members need to develop a joint approach and communication routines (see [33]).

We assume that for NATO HQs to be able to attain its three goals (i.e., effective and timely sharing of information, quick and timely decision making, and improved shared awareness of tasks and responsibilities) staffs' active participation in NATO pre-deployment training is necessary. The greater the personnel's participation in NATO pre-deployment, the more likely it will be to reach its operative goals.

As already noted by the SMEs, the rotation practices in NATO HQs can be a central barrier to organisational effectiveness. They mentioned different aspects of the rotation practices such as no handover/mentoring programme, gaps of transition, difference or shortness of tour length, and national rotations that are not synced. Studies on personnel rotation revealed possible causes for negative impacts of rotation on performance. Hartman, Stoner and Arora [22] show that after each rotation the newcomers need to acquire skills and knowledge concerning structure, equipment, and processes. In addition, feelings of isolation, frustration and deprivation of a group identity [21] or difficulties in adopting new social structures and rules [13],[43] can occur among new members of the HQ. Such challenges can result in lower organisational effectiveness.

Therefore, we assume that for a NATO HQ to be able to attain its three goals (i.e., effective and timely sharing of information, quick and timely decision making, and improved shared awareness of tasks and responsibilities) the rotation practice of the contributing Nations must be coordinated and a comprehensive handover must be assured. The greater the degree to which the rotation practice achieves these issues, the more likely it will be to reach its operative goals.

C.3.4 Culture

Organisational culture is formed by the set of values and norms that influence its organisational members' interactions with each other and with people outside the organisation [28]. An organisation's culture can be used to increase its effectiveness [41], because organisational culture influences the way members make decisions, the way they understand and deal with the organisation's environment, what they do with information, and how they behave [12]. Organisational values are general criteria people use to establish which behaviours are desirable or undesirable [28]. Two kinds of values can be distinguished (Figure C-5). Terminal values represent outcomes people and the organisation wants to achieve, such as excellence, reliability, innovativeness, stability, and predictability. The NATO HQ might adopt the terminal values flexibility and agility of processes and stability of the organisational structure as guiding principles. Instrumental values, on the other hand, are desired modes of behaviour, such as working hard, being creative and courageous, being conservative and cautious, taking risks and maintaining high standards. The NATO HQ might embrace trusting each other, being open to diversity, and having an improvement orientation as guidelines. Team members who trust each other are better able to examine and improve team processes and hence, to self-manage their own performance [18],[20]. Besides, employees

report lack of trust as one reason they resist being introduced to a team in the first place, and that its absence interferes with the effective functioning of work teams [32]. NATO HQ's organisation members are characterized by high diversity in national background and expertise. High diversity within teams and organisations can cause integration problems, low cohesion and dissatisfaction, which in turn affects the team's effectiveness negatively (e.g., [25],[49]). An organisational culture that promotes being open to diversity stimulates team cohesion and allows the innovative and creative potential of the heterogeneity to be exploited. In organisations valuing an improvement-oriented culture organisational members demonstrate a high level of proactivity in trying to improve. This can lead to improved collaboration between different departments and an increased emphasis on efficient cooperation among employees.

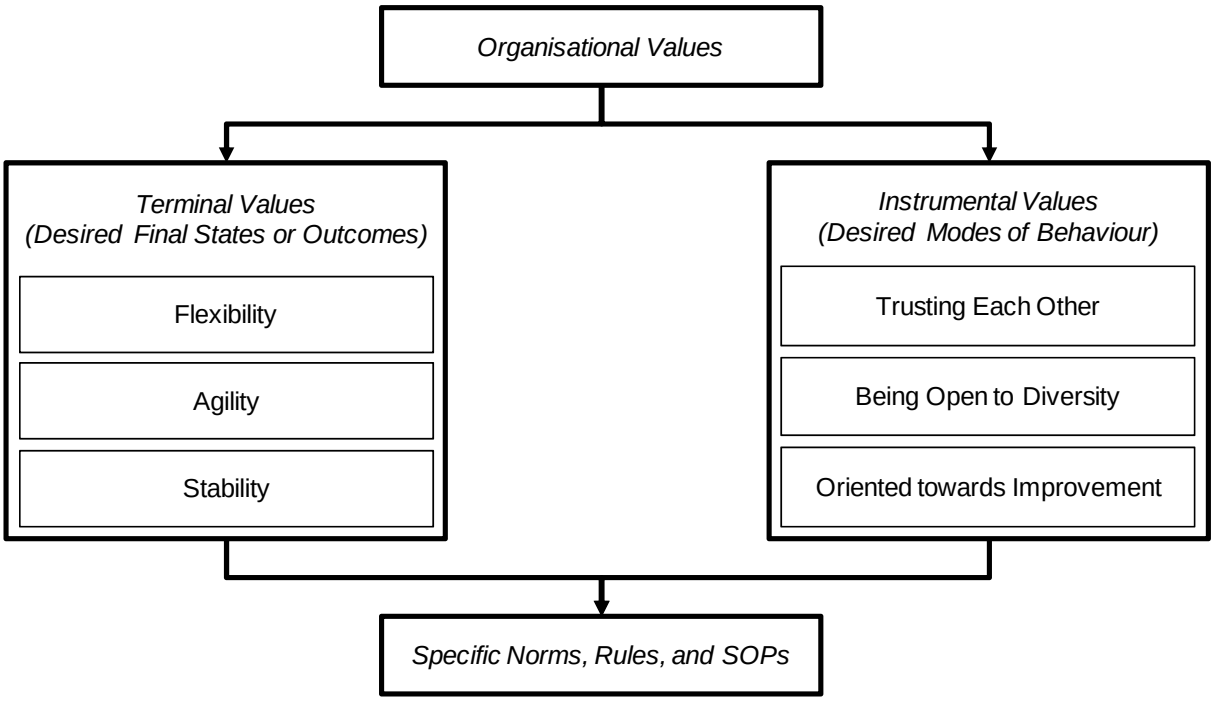

Figure C-5: Terminal and Instrumental Values in a NATO HQ's Organisational Culture. Source: [28].

Hence, an organisation's culture consists of the end states the organisation wants to reach (i.e., its terminal values) and the modes of behaviour it supports (i.e., its instrumental values). The NATO HQ's mission statement and official goals (i.e., supporting the troops on the ground by agility and flexibility of the processes and stability of the organisational structure) should be reflected in the terminal values it adopts. And for the NATO HQ staff to understand and be able to act in accordance with the instrumental values, the NATO HQ should develop specific norms, rules and standard operating procedures that typify its specific instrumental values.

We assume that for the NATO HQ to be able to attain its three goals (i.e., effective and timely sharing of information, quick and timely decision making, and improved shared awareness of tasks and responsibilities) its terminal cultural values must reflect flexibility and agility in its processes, but stability in the organisational structure, and its instrumental cultural values should include trusting each other, being open to diversity, and having an improvement orientation. The greater the degree to which the NATO HQ has developed these cultural values, the more likely it will be to reach its operative goals.

C.4 DESCRIPTION OF THE INSTRUMENT

The last purpose of this paper is to outline an instrument on the basis of the above-introduced model of organisational effectiveness of Non-Article 5 crisis response operations HQs. It assesses the degree to which "Structure and Processes", "People", and "Culture" align with the HQ's operative goals (i.e., effective and timely sharing of information, quick and timely decision making, and improved shared awareness of tasks and responsibilities). Assessing these makes it possible to test the relationship between the input factors and the goal achievement of the HQ.

C.4.1 Operative Goals

In order to measure the operative goals of effective and timely sharing of information, decision making, and shared awareness of tasks and responsibilities, we propose using items originating from the U.S. Surface Warfare Officers' School's Team Assessment Instrument [44]. We will select three items per construct, for a total of nine items. The 7-point rating scales will range from "Very Uncharacteristic" to "Very Characteristic". Sample items representing the information sharing, decision making, and shared awareness constructs are, respectively, "Information is shared in a timely manner, that is, in time to act on the information given", "Our decision making process fosters innovative, far-reaching decisions", and "It is clear to team members how the mission is related to overall organisational goals".

C.4.2 Structure and Processes

As described earlier, in order for the NATO HQ to be able to attain its operative goals, its organisational structure and processes must be organic. As defined previously, an organic structure is flat, decentralized, and flexible. Thus we will assess the organisation's structure (i.e., "flatness"), decentralization, and flexibility. The three structure items, the three decentralization items, and the three flexibility items will all come from the work of Bjørnstad [6],[7],[8]. The participants will rate the nine items on 5-point rating scales with varying labels depending on the construct. Samples items assessing the structure, decentralization, and flexibility constructs are, respectively, "How would you describe the organisation's hierarchy", "In your opinion, who makes most decisions in the organisation" and "How would you describe the flexibility of the organisation in terms of switching between centralized and decentralized processes".

C.4.3 People

C.4.3.1 Leadership

As mentioned previously, for the NATO HQ to meet its goals, its leadership must be described as transformational. We will assess transformational leadership with items originating from Bass and Avolio [5]. Transformational leadership can be described with four "I's", idealized influence (attributes/ behaviours), inspirational motivation, intellectual stimulation, and individualized consideration [see 4 for more detail]. We will select three items per construct from the Multi-factor Leadership Questionnaire (MLQ) [5], for a total of 15 items. The participants will rate the items on 5-point rating scales ranging from "Not at all" to "Frequently". Sample items representative of the idealized influence (both attitudes and behaviours), inspirational motivation, intellectual stimulation, and individualized consideration constructs are, respectively, "The person I am rating acts in ways that builds my respect", "The person I am rating emphasizes the importance of having a collective sense of mission", "The person I am rating talks enthusiastically about what needs to be accomplished" and "The person I am rating suggests new ways of looking at how to complete assignments".

C.4.3.2 Pre-Deployment Training

Also mentioned earlier was the importance of the staff's active participation in NATO pre-deployment training. We developed a dichotomous (i.e., Yes/No) screening item, "I attended NATO pre-deployment

training", to classify participants who took part in NATO pre-deployment training versus those who did not. We will then ask those participants who participated in such training three additional questions, such as "My NATO pre-deployment training helped me position myself within the social network of my team". The participants will rate these items on 7-point rating scales ranging from "Strongly disagree" to "Strongly agree".

C.4.3.3 Rotation

Lastly, we will assess the rotation practices in the NATO HQ by asking the participants three questions such as "Different tour lengths make working together difficult". The participants will rate these items on 7-point rating scales ranging from "Strongly disagree" to "Strongly agree".

C.4.4 Culture

We suggest that, in order to reach its operative goals, the NATO HQ should develop the instrumental values of trust, openness to diversity, and improvement orientation.

C.4.4.1 Trust

Blais and Thompson [9], based on the work of Adams and Sartori [1], developed measures of trust in teams and trust in leaders to be used at the level of small military units. We will adapt the Trust in Teams Scale to the context of NATO HQs. Specifically, we will assess the constructs of benevolence, competence, integrity, and predictability, each of which is defined as a dimension of trust in teams. We will select three items per construct, for a total of 12 items, and the participants will rate these items on 7-point rating scales ranging from "Strongly disagree" to "Strongly agree". Samples items indicative of the benevolence, competence, integrity, and predictability dimensions are, respectively, "Even in tough times, my team members are supportive, "My teammates are capable at their jobs", "My teammates have strong ethics", and "I know what to expect from my team".

C.4.4.2 Openness to Diversity

In order to assess the organisation's level of openness to diversity, we wrote three items such as "National differences were considered important by most members of the organisation (reverse-scored)". The participants will rate these items on 7-point rating scales ranging from "Strongly disagree" to "Strongly agree".

C.4.4.3 Improvement Orientation

Finally, to evaluate the level of organisational member's improvement orientation, we will use three items originating from the work of Van den Berg and Wilderom [45]. The participants will rate these items on a 7-point rating scale ranging from "Strongly disagree" to "Strongly agree". Sample items include "Employees take initiatives to improve the way in which the work is done".

C.5 CONCLUSION

The purpose of this paper was to investigate potential models and tools for understanding, explaining, and measuring organisational effectiveness of coalition HQs conducting Non-Article 5 crisis response operations in order to overcome challenges caused by its multi-national setting.

Military and management experts define organisational effectiveness as the ability of an organisation to achieve its goals and describe an effective HQ as an organisation which:

a) Is stimulating information sharing;

b) Is able to make fast and timely decisions; and

c) Has a common understanding of its internal tasks and responsibilities.

Organisational effectiveness research show that these operative goals of a HQ can only be attained if internal factors such as structure and processes, people, and culture are strategically aligned towards them. On the basis of these assumptions we designed a model displaying this chain of goal achievement and drafted an instrument measuring organisational effectiveness in the particular context of a NATO HQ.

We believe that this instrument offers great promise in providing a diagnostic tool for improving the ability of an HQ to assess and then trace through the impact of the alignment of internal organisational structure and processes, people and culture with its mission. We also believe that this tool enables the identification of inefficiencies in coalition HQs and offers some insight into what factors are vital to address in achieving this alignment. Consequently, possible adaptations and improvements in order for the organisation to become more organisationally effective can be formulated.

The instrument needs to be tested in a coalition HQ in order to see whether we have captured the relevant components and concepts. For validation purposes, it needs to be tested in a variety of coalition HQs conducting Non-Article 5 crisis response operations.

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Annex D – ORGANIZATIONAL EFFECTIVENESS OF MULTI-NATIONAL OPERATIONS' HEADQUARTERS

Questionnaire

Dear Sir or Madam,

This questionnaire investigates the complexity of socio-technical systems consisting of structures, people, processes, and cultures within multinational military headquarters for the purpose of understanding, explaining, and measuring the organizational effectiveness of coalition headquarters implementing Non-Article 5 crisis response operations.

While making your responses to the questionnaire items below, think about your current assignment in this HQ, then think about the overall organization. Indicate your response by placing an "X" in the box which best expresses your personal opinion/situation, filling in the blank, or writing a short answer as appropriate for each question. Your input to this research study is highly valued and will be anonymous.

Thank you.

Refer questions or comments to:

Chair of NATO HFM RTG-163
Capt (BGR-N) D.Sc. Yantsislav Yanakiev
Chief of Strategic Studies Department at Defence Advanced Research Institute
Rakovski National Defence Academy
82 Evlogi and Christo Georgievi Blvd.
1504 Sofia
BULGARIA
Tel. +359 2 92 26538
Fax. +359 2 944 1657
Email: yanakievy@md.government.bg

1	**Are you...?**			
	☐ 0	**male**	☐ 1	**female**
2	**What is your age (in years)?**			
3	**What is your nationality?**			
4	**What is your first language?**			
5	**Are you...?**			
	☐ 0	**military**	☐ 1	**civilian**
6a	↘	**<u>If civilian</u>, are you...?**		
	☐ 0	**government civilian**	☐ 1	**contractor working within the HQ**
6b	↘	**<u>If military</u>, what branch do you belong to?**		
	☐ 1	**army**		
	☐ 2	**air force**		
	☐ 3	**navy**		
	☐ 4	**marine (or equivalent)**		
6c	☐ 5	**other:**		
7	↘	**<u>If military</u>, what is your rank?**		
8	**Is this your first deployment in a multinational HQ?**			
	☐ 0	**no**	☐ 1	**yes**
9	↘	**<u>If no</u>, how many times have you been deployed to a multinational HQ before?**		

10	**How long have you been in this HQ (in months)?**			
11	**In your current position, are you responsible for supervising others in the HQ?**			
	☐ 0	**no**	☐ 1	**yes**
12	➘	**If yes, how many?**		

Choose the answer that best describes the structure in your HQ.		**very hierarchical**	**somewhat hierarchical**	**neither hierarchical nor flat**	**somewhat flat**	**very flat**	**I don't know**
13	**The structure of this HQ is...**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9

Choose the answer that best describes the processes in your HQ.		**very centralized**	**centralized**	**neither centralized nor decentralized**	**decentralized**	**very decentralized**	**I don't know**
14	**The processes in this HQ are...**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9

Please indicate how strongly you agree or disagree with the following statements related to this HQ.		**strongly disagree**	**disagree**	**neither agree or disagree**	**agree**	**strongly agree**	**I don't know**
15	**There are many levels of decision-making authority.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
16	**There is a short chain of command.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
17	**Information only flows through the official chain of command.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9

18	**Senior leaders delegate decision-making.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
19	**The work processes are decided at higher levels within the chain of command.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
20	**This HQ can adapt to unplanned events.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
21	**In response to unplanned events, this HQ can quickly change the way work gets done.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
22	**Coordination among functions is the responsibility of someone higher up in the chain of command.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
23	**When facing unforeseen events, coordination among functions is difficult.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9

Please indicate how strongly you agree or disagree with the following statements related to this HQ.		**strongly disagree**	**disagree**	**neither agree or disagree**	**agree**	**strongly agree**	**I don't know**
24	**Everyone has specific specialization for the assigned tasks.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
25	**Everyone has specific specialization for the occupied position.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
26	**Everyone has broad specialization to implement as many tasks as possible.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
27	**Everyone has broad specialization to occupy different positions.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
28	**Tasks are carried out by specialized teams.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
29	**We frequently experience misunderstandings.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
30	**We are aware of each other's responsibilities.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9

31	**We are unsure about how to accomplish joint tasks.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
32	**We do not know what each other's roles are in relation to accomplishing joint tasks.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
33	**We trust each other.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
34	**Coalition partners are capable at their job.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
35	**Coalition partners keep their word.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
36	**Coalition partners know what to expect from each other.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9

37	**I took part in NATO (e.g. multinational) pre-deployment training prior to joining this HQ.**			
	☐ 0	**no**	☐ 1	**yes**
38	**I took part in a national pre-deployment training prior to joining this HQ.**			
	☐ 0	**no**	☐ 1	**yes**
	➘	***If you haven't had any pre-deployment training prior to joining this HQ go to question 44.***		

Please indicate how strongly you agree or disagree with the following statements related to this HQ.		**strongly disagree**	**disagree**	**neither agree or disagree**	**agree**	**strongly agree**	**I don't know**
39	**Pre-deployment training effectively prepared me for working in this HQ.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
40	**Pre-deployment training helped me develop a better understanding of my coalition partners.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
41	**Pre-deployment training helped me understand the informal social network.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9

42	**Pre-deployment training helped me understand the importance of effective communication.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
43	**Pre-deployment training helped me understand how to work effectively with people from other cultures.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9

Please indicate how strongly you agree or disagree with the following statements related to this HQ.		**strongly disagree**	**disagree**	**neither agree or disagree**	**agree**	**strongly agree**	**I don't know**
44	**The different rotation cycles of the nations reduces our performance.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
45	**The rotation cycles of the different nations needs to be aligned.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
46	**The handover between personnel during the transition period is effective.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
47	**The effectiveness of work processes is monitored.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
48	**We actively look for better ways of working.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
49	**We are open to changes that will improve our organization.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
50	**We often take the initiative to improve our work processes.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
51	**Cultural differences are valued.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
52	**Diverse opinions are valued.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
53	**Cultural similarities are beneficial to our organization.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
54	**We understand how our objectives/actions contribute to the mission.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9

55	**Personnel understand their objectives/tasks.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
56	**The mission is clear.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
57	**We seek information as needed.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
58	**We provide information in a timely manner.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
59	**We receive information in a timely manner.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
60	**The information we receive is both accurate and up to date.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
61	**We share information with each other regardless of rank.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
62	**Organizational decisions are made in a timely manner.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
63	**Organizational decisions are implemented quickly to achieve desirable results.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
64	**A variety of options are explored before decisions are made.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
65	**We have agreed methods for decision making.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
66	**The quality of our coalition team's output is very high.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
67	**When high priority work arises, my coalition team does an outstanding job in handling these situations.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
68	**The coalition team's performance in comparison to similar coalition teams is very high.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
69	**My superior meets the goals and expectations placed on him/her.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9

70	**My superior consistently drives for better outcomes.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
71	**My superior excels in selecting and developing good people.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
72	**My superior consistently helps subordinates produce high quality work.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
73	**My superior is able to establish and communicate common goals.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
74	**My superior uses cross-cultural networks to produce better outcomes.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
75	**My superior uses cultural differences to produce better outcomes.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
76	**My superior is effective at managing important external relationships to meet goals and expectations.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
77	**My superior is a good judge of character, even across cultures.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
78	**My superior is able to motivate subordinates with different cultural backgrounds.**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9

In this HQ, obstacles to information sharing are:							
Choose the answer that best describes each statement.		**never**	**seldom**	**sometimes**	**often**	**very often**	**I don't know**
79	**Technical difficulties**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
80	**Language barriers due to non-native speakers**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
81	**Cultural differences in language use and interpretation**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9

82	**Procedural inefficiencies**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
83	**Differences in national culture**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
84	**Differences in organizational culture**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
85	**Time constraints**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
86	**Differing priorities**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
87	**Approachability of commander**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
88	**Lack of knowledge about who needs the information**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9
89	**Political constraints/control**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 9

This is the end of the questionnaire!

Thank you for taking the time to complete this survey.

If you have additional comments, please write them below.

Annex E – INTERVIEW PROTOCOL

We have been tasked by NATO RTO to study organisational effectiveness in coalition teamwork. The purpose of this interview is to learn from your experiences in this HQ. We will ask you to provide some demographics. This is done to help us interpret the data. However, your statements will be treated anonymously. The report from this study will be unclassified.

Your participation is very valuable to us. We would like to have your informed consent to participate. We would also like to have your permission to voice record this interview. This is done to help us document your answers in an accurate way.

E.1 DEMOGRAPHICS

- Sex (male/female).
- Age.
- Nationality.
- First language/native English.
- Military service (army, Air force, navy, marine, other) /civilian.
- Rank.
- First deployment in multinational HQ? If not, how many times have you been deployed?
- How long have you been in this HQ (months)?
- In current position, are you responsible for supervising others in the HQ?

E.2 MAIN QUESTIONS

1A) What is your formal position in this HQ?

1B) Please describe your role, tasks and responsibilities in this HQ?

2) How are you organised within the HQ (J-structure or other)?

3) Do you perceive the organisational structure to be hierarchical or flat? By organisational structure we mean the formal system of tasks and authority relationships.
   - Could you give some examples?
   - How does that affect your daily work?
   - What works well /not so well?

4) Do you perceive the HQ to have centralised or decentralised command processes?
   - Could you describe the processes?
   - How does that affect your daily work?
   - What works well /not so well?

5A) Is the working environment in this HQ flexible or rigid?

- In what way?
- Could you give some examples?
- What works well /not so well?
- How does that affect your daily work?

5B) What are the most critical factors impacting a flexible working environment in this HQ (technology, procedures, doctrine, tactics, security, other)?

6) In this HQ do you primarily have specialised or overlapping roles?

- How does that affect your daily work?
- What works well /not so well?
- Could you give some examples?

7) How would you describe the leadership in this HQ? By leadership we mean how the leader communicates and interacts with his subordinates?

- Does the leadership style vary (nations, branches, persons, situations)?
- How does that affect your daily work?
- What works well /not so well?
- Could you give some examples?

8A) What kind of pre-deployment training did you receive (national, NATO, other, none)?

- How long?
- What was included?
- Was it multinational?
- Was anything missing to prepare you for your job?

8B) In order to achieve an effective HQ, what are the most critical aspects that should be included in pre-deployment training?

9A) Briefly describe the rotation process in this HQ:

- Standardised procedures?
- Handover (how is it done, how long)?
- Was the handover sufficient?
- Does the rotation process affect effectiveness in the HQ?

9B) What are the most critical factors for an effective rotation process?

10) How do you establish trust between individuals in this HQ?

- What can you do to establish trust?
- Do you trust everyone in the HQ? If not, why?
- Is trust important? If so, why?

11) Having a multinational HQ may have positive and negative implications.

   A) What do you think are the positive aspects?

   B) What do you think are the negative aspects?

   C) What are the main challenges?

12) To be improvement oriented is to allow initiatives to improve work, processes and routines. It has both pros and cons. It can lead to improvements but also generate mistakes. Would you say that his HQ is improvement oriented or not?

   - Can you give some examples?
   - Do you have formal procedures?

13) How does information-sharing work in this HQ?

   - What works well what does not work well, why?
   - What are the most critical aspects that influence information sharing (positively or negatively)? *(hierarchy, centralised/decentralised procedures, flexibility, specialised/overlapping roles, leadership, pre-deployment training, rotations, trust, improvement orientation)*
   - How can information sharing be improved?

14) How does decision making work in this HQ?

   - What works well what does not work well, why?
   - What are the most critical aspects that influence decision making (positively or negatively)? *(hierarchy, centralised/decentralised procedures, flexibility, specialised/overlapping roles, leadership, pre-deployment training, rotations, trust, improvement orientation)*
   - How can decision making be improved?

15) To what extent is there a shared awareness of tasks and responsibilities in this HQ?

   - Is it important for you in your work to be aware of other staff member's tasks and responsibilities?
   - Can you give some examples?
   - What are the most critical aspects to generate a shared awareness of tasks and responsibilities (positively or negatively)? *(hierarchy, centralised/decentralised procedures, flexibility, specialised/ overlapping roles, leadership, pre-deployment training, rotations, trust, improvement orientation)*
   - How can this be improved?

16) Finally, what do you think is most important to improve the effectiveness in this HQ?

Annex F – REPORT ON THE PRELIMINARY RESULTS FROM ORGANIZATIONAL STUDY WITHIN KFOR HEADQUARTERS, 11-15 OCTOBER 2010

F.1 BACKGROUND AND OBJECTIVE

In October 11 – 15, 2010, a team of researchers from NATO Human Factors and Medicine Panel Research Task Group "Improving the Organisational Effectiveness of Coalition Operations" (HFM RTG-163) conducted a scientific organizational study within the Headquarters (HQ) at KFOR.

The objectives of this study were:

1) To examine organizational effectiveness factors within a multi-national context;
2) Provide feedback to the KFOR Commander regarding different facets of his organization; and
3) To test a theoretical model developed by researchers within HFM RTG-163 regarding antecedents of organizational effectiveness within a NATO HQ.

The primary purpose of the current brief report is to provide feedback to the KFOR Commander Major General Erhard BÜHLER on the preliminary results of the study and to offer a few recommendations for continued success.

The final report for the larger HFM RTG-163 group will be presented to NATO Research and Technology Agency in September 2011.

The methods employed during the study in KFOR HQ included a combination of organizational surveys and interviews.

F.2 SURVEY RESULTS

Data were collected from 103 military members and civilian HQ personnel, including local contractors. This brief preliminary report focuses only on the results from the sub-sample of the military personnel. Their socio-demographic composition was as follows (see Table F-1).

Table F-1: Socio-Demographics of Respondents.

Sex:	Male = 95 Female = 7 NA = 1
Age:	Average = 40.3 years
Nationality:	24 NATO and PfP nationalities (USA = 19, DEU = 15, TUR = 14, ITA = 11, HUN = 6, UK = 5, IRE = 5, AUS = 5, ROU = 5, SLV = 5, FRA = 4, SWE = 4, GRC = 3, POL = 3, BGR, BEL, = 2, POR, SPA, UKR, CZE, EST, FIN, NOR = 1)
Military service:	Army = 76 Air force = 14 Navy = 10 Marines = 1 NA = 2
Number of multi-national deployments:	First deployment = 53; of the remaining 50 who had been deployed before, the majority (= 36) had been deployed once or twice.
Length of current deployment so far:	Average = 5.91 months
Supervisory role:	Supervisory role = 55, supervising on average 8.92 subordinates

A variety of organizational dimensions (see Figure F-1) were assessed, including:

- *Decentralization* – The degree to which the organizational structure and processes are flat and decentralized;
- *Flexibility* – The degree to which the organization is adaptable to changing demands;
- *Differentiation* – The degree to which skills are dispersed throughout the organization;
- *Rotation Practices* – The rotation cycle;
- *Pre-deployment Training Perceptions* (Note these were for research purposes and will not be discussed in the current report);
- *Leadership* – The degree to which leadership is transformational;
- *Trust* – The degree to which personnel feel trusting of others;
- *Diversity* – The degree to which personnel are open to diversity; and
- *Improvement Orientation* – The degree to which the organization values improvement.

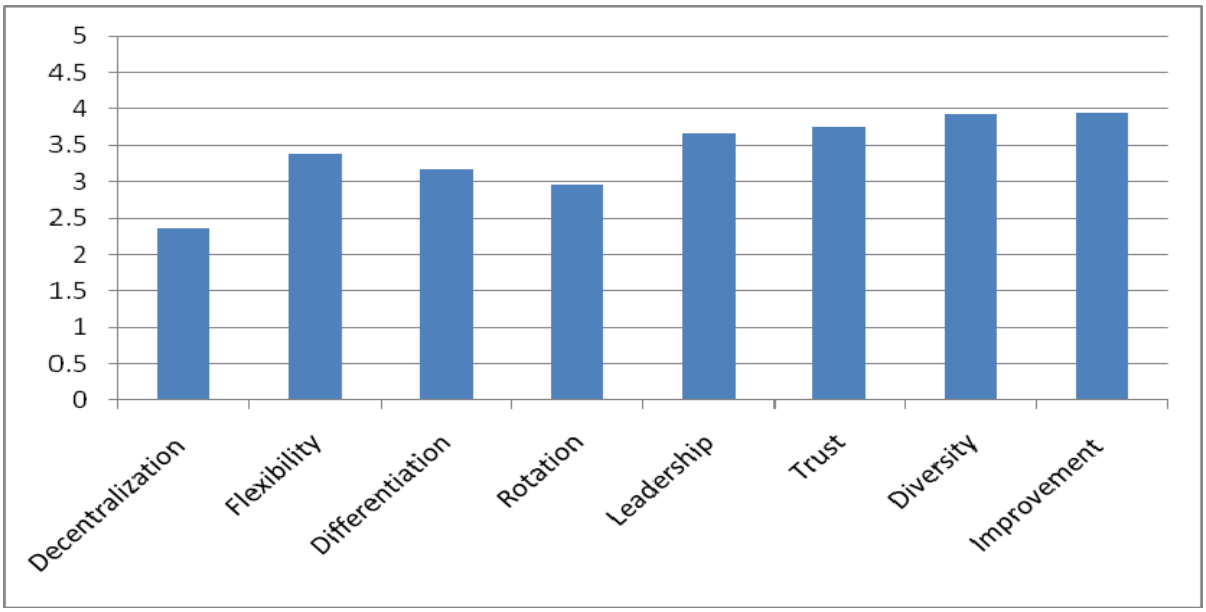

Figure F-1: Summary of Organizational Factors within KFOR HQ 2010 (Assessment Scale 1 "Strongly Disagree" – 5 "Strongly Agree").

As shown in Figure F-1, personnel rated the structure of the organization as more centralized than decentralized, as having average flexibility and differentiation, slightly below average rotation practices, and slightly above average on leadership, trust, openness to diversity, and improvement orientation *(For items assessing these dimensions please see "Appendix F-1: Items per Dimension").*

Additionally, several organizational outcomes were assessed, including:

- **Information Sharing** – The degree to which personnel feel that information is shared within the HQ;
- **Decision Making** – The degree to which personnel feel that decisions are made in a timely manner;
- **Shared Awareness** – The degree to which personnel feel that there is shared awareness within the HQ; and
- **Perceived Effectiveness** – Overall perceptions of organizational effectiveness.

As shown in Figure F-2, the KFOR HQ was perceived as an organization operating with slightly higher than average information sharing, decision making, shared awareness, and perceived effectiveness *(For items assessing these dimensions please see "Appendix F-1: Items per Dimension").*

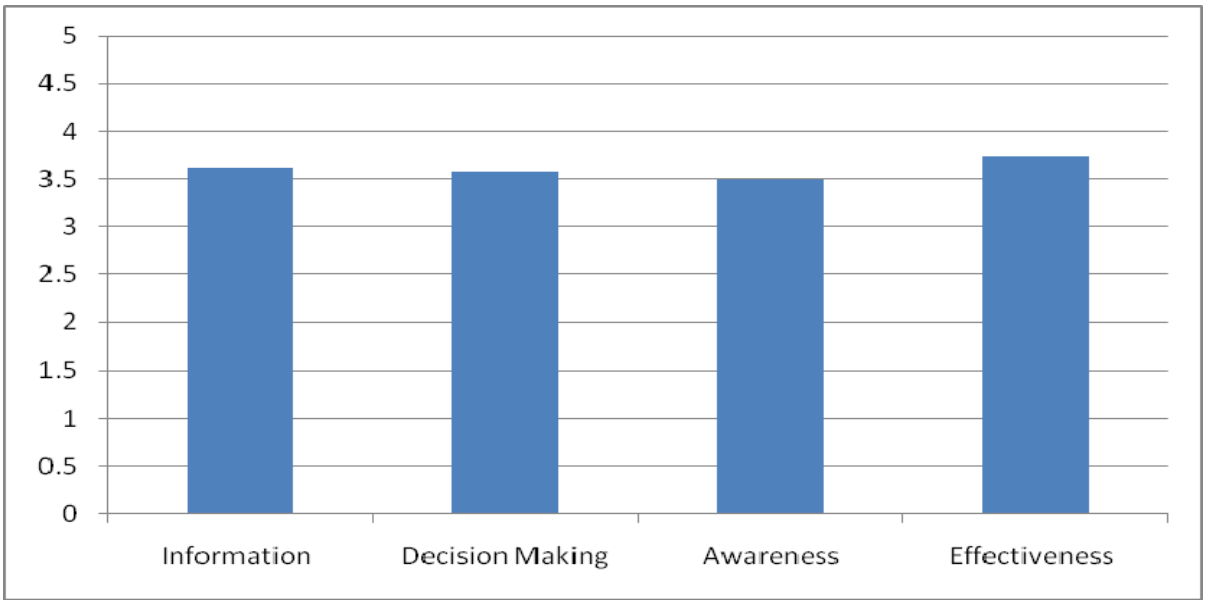

Figure F-2: Summary of Organizational Outcomes within KFOR HQ 2010 (Assessment Scale 1 "Strongly Disagree" – 5 "Strongly Agree").

Further, the research group examined the relationships between the organizational factors and the outcomes to explore which of the factors was most predictive of the outcomes. We found that greater levels of flexibility, leadership, and trust were unique predictors of more effective and timely decision making and sharing of information in the HQ. Additionally, greater levels of flexibility, trust, and improvement orientation predicted more shared awareness of tasks and responsibilities in HQ.

The results of these analyses suggest that the organizational factors that are most influential to the outcomes measured in this study are:

- Flexibility;
- Trust;
- Leadership; and
- Improvement Orientation.

F.3 INTERVIEW RESULTS

Interviews were conducted mainly at the Assistant Chief of Staff (ACOS)-level, covering J1 through J5, J8, Headquarters Support Group (HSG), Military Civil Advisory (MCA) division and Joint Intelligence Cell (JIC). All interviewees except for two were military officers (Colonel and Lt Colonel Level).

In general, there were varied opinions in response to the questions asked, which could pose problems in terms of internal coordination. However, the differences in opinions can also reflect flexibility within the HQ, for example, in terms of using different ways to organise given different contexts, the number of employees to use, and the tasks to be performed.

With regard to the question of how the headquarter is organised, specifically whether or not it is a traditional J-structure, the opinions varied. Some thought it was a traditional J-structure, while others saw it as either a J-structure undergoing change or a structure other than J-structure. With this said, the general view from the interviews was that the HQ had become flatter in its organizational structure while still

maintaining its hierarchical character. Interviewees perceived that the flatter the organization, the better information sharing was.

Most of the respondents evaluated the work environment within this organisation as sufficiently flexible and more flexible at lower levels (within own unit) than at higher levels. Similar answers were given on the topic of improvement orientation. Some thoughts were made on what impacted improvement orientation in KFOR HQ specifically: Rotations were regarded as having a negative impact on the HQ ability to be improvement oriented due to loss in institutional memory when personnel are exchanged frequently. Effective information sharing and high level of shared awareness of tasks and responsibilities was considered as having a positive effect on improvement orientation.

Although, most of the interviewees viewed the specialisation in roles as positive, a lack of information sharing and shared awareness were seen as negative outcomes of the specialisation of roles, which was viewed as leading to a stove-piping of the HQ. No conclusions can be drawn at this moment regarding the relationship between specialisation and decision-making per se, although, a "too narrow focus" was thought of as detrimental to achieving goals.

The survey results show that the HQ was considered to be as more centralised than decentralised. However, the interview respondents had different opinions of the effects of the degree of centralisation. Some of the interviewees thought that the command processes were too decentralised (more synchronisation between branches needed), while others viewed it as too centralised (creating bottlenecks in information sharing). Centralisation is thought to be characteristic of how higher echelons of the headquarter make decisions. In day-to-day business, the command processes were thought of as more decentralised.

The leadership was by interviewees characterised as comfortable, inclusive, open, friendly, respectful, supportive, professional, and effective. Interviewees saw information sharing as a critical aspect of good leadership. They mentioned the weekly commander's briefings as an example of the good leadership in the current HQ in that it lead to shared awareness. Regarding the decision making, they appreciated the formal structure and the ability to participate in the decisions through discussions. The participants indicated that effective information sharing was a central aspect in decision making.

Although shared awareness was rated quite high by survey respondents, interviewees perception of whether there is a shared awareness differed. Too much role specialisation and the rotation practices were mentioned aspects that might affect shared awareness negatively. *Features that were thought of as positive for shared awareness were a flat hierarchy, effective information sharing, decentralisation as well as joint multi-national training.*

Pre-deployment training was among interviewees associated with increased shared awareness. In this regard, the interviewees mentioned understanding of the procedures and structures of the HQ, as well as, the on-site key leader training as very valuable. Moreover, the analysis of the interviewees' statements revealed that pre-deployment training is connected to improvement of shared awareness in a broader sense, including an awareness of the KFOR mission as a whole, and an understanding of the culture and political situation of Kosovo.

Handover/takeover was strongly associated with reduced effectiveness, mainly due to the loss of institutional memory. The interviewees specifically mentioned the newcomers' lack of shared awareness of who does what in the HQ as an impediment to this reduced effectiveness. As information sharing between the predecessor and the successor is a vital part of the handover/takeover process, this must also be seen as associated to this factor.

The interview results indicate that trust can be viewed as both a prerequisite for a well-functioning organisation, but also a result. Shared awareness and information sharing were mentioned as aspects that establish trust. Some of the interviewees separated organisational/official trust and individual trust.

One possible explanation for this separation could be that organisational/official trust affects the operative goals of the HQ, while individual trust is merely a result of shared awareness, information sharing, and decision making, at a person-to-person level.

There was a variety of opinions about the effectiveness of multi-national coalition HQs. A spontaneous first opinion among interviewees was that a multi-national coalition HQ is less effective than a national HQ because of the frequent rotations (impaired shared awareness) and communication problems due to differences in language skills (impaired information sharing). However, most interviewees also believed that the multi-national context facilitates decision-making since decision makers are presented with different perspectives and mindsets. Furthermore, interviewees believed that the decisions of a multi-national HQ have greater impact than those of a national HQ. On the other hand, it can be difficult to reach a decision because of national caveats. Nevertheless, information sharing is also improved in a multi-national HQ compared to a national HQ due to the fact that the frequent rotations demands a more structured and frequent information sharing. Finally, the participants indicated that team building and the establishment of trust does take longer and is more difficult within a multi-national context. Please, keep in mind that the data above show that the participants perceive decision-making, information sharing, and even effectiveness as "above average" in this HQ.

In conclusion, KFOR HQ seems to be undergoing a change at the moment, necessitating greater flexibility due to the same amount of tasks being managed by fewer people. *The overall impression reflected in the interviews is of a well-functioning and rather flexible HQ*. Some of the challenges of the HQ include information sharing, shared awareness of tasks and responsibilities, specialisation, dealing with multi-nationality, the rotation process, and how to adjust to novel tasks for *KFOR* (supporting Kosovo Security Forces [KSF], while reducing the KFOR footprint in Kosovo). These areas could be investigated further in order to enhance the effectiveness of the HQ.

F.4 RECOMMENDATIONS

Based on the results of this brief organizational study the following recommendations were provided to the KFOR Commander:

1) *Continue to foster trust among your personnel.* Trust was a robust predictor of the organisational outcomes in this study. Given the multi-national context and extensive diversity of NATO HQs, developing trust can be challenging. Some ways to foster trust include opening clear communication channels with personnel, focusing on unifying concepts, such as the mission to generate a common organizational identity, establishing consistent processes to ensure predictability and awareness, sharing information about each other's competencies and job skills, and to the extent possible, try to minimize miscommunications and misunderstandings due to cultural differences.

2) *Continue to promote effective leaders within your organisation*. Encourage leaders to communicate often with their subordinates to help clarify tasks, roles, responsibilities, and expectations. Encourage leaders to motivate and develop their subordinates.

3) *Continue to emphasise improvement within your organization.* As a senior leader, develop a shared awareness that improvement is valued and encourage ideas to be shared regarding improvement options.

4) *The researchers noted that personnel feel that the organizational structure is more centralised rather than decentralised.* It should be noted that given the multi-national context of KFOR, this may actually be a positive organisational attribute. Further, the findings from this brief study suggest that the organisational outcomes improve with added structure. Efforts should be made to continue in clarifying roles and responsibilities within the HQ and to establish clear and structured processes as well as structured decision hierarchies.

5) *Obstacles to information sharing.* In some cases specialisation could hamper information sharing if shared information needs are not given priority. An explicit Responsibility to Share codex, if not already in place, could alleviate this obstacle.

6) *Multi-nationality and rotation practices:* These factors are positive in some sense, for example, multi-nationality brings diversity to the decision process and rotation makes individuals feel less strain. However, this can lead to a fragmentation of an organisation and its processes. Key leader training could be given to more people to alleviate this problem.

7) *Downsizing of the footprint of KFOR while building new competence in military assistance*. How to transform the HQ into one employing more military assistance and less of its own capabilities to perform security should be considered a strategic challenge of the HQ. Probably, due to less manning in HQ, more personnel need to be engaged in supporting the military assistance part than at the moment, and receive explicit training in this novel task. This, of course, depends on the overall direction and tasks of the HQ in the future.

F.5 CONTACT INFORMATION

For additional information concerning this study please contact:

Chair of NATO HFM RTG-163
Capt (BGR-N) D.Sc. Yantsislav Yanakiev
Head of Strategic Studies Department at Defence Advanced Research Institute
Rakovski National Defence Academy
82 Evlogi and Christo Georgievi Blvd.
1504 Sofia
BULGARIA
Tel. +359 2 92 26538
Fax. +359 2 944 1657
Email: yanakievy@md.government.bg

Appendix F.1: Items per Dimension

Response categories: 1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree

Decentralization

- The processes in this HQ are… (1 = very centralized; 2 = centralized; 3 = neither centralized nor decentralized; 4 = decentralized; 5 = very decentralized).
- Senior leaders delegate decision-making.
- The work processes are decided at higher levels within the chain of command.

Flexibility

- This HQ can adapt to unplanned events.
- In response to unplanned events, this HQ can quickly change the way work gets done.
- Coordination among functions is the responsibility of someone higher up in the chain of command.
- When facing unforeseen events, coordination among functions is difficult.

Differentiation

- Everyone has specific specialization for the assigned tasks.
- Everyone has specific specialization for the occupied position.
- Everyone has broad specialization to implement as many tasks as possible.
- Everyone has broad specialization to occupy different positions.
- Tasks are carried out by specialized teams.

Rotation

- The different rotation cycles of the Nations reduces our performance.
- The rotation cycles of the different Nations needs to be aligned.
- The handover between personnel during the transition period is effective.

Leadership

- My superior meets the goals and expectations placed on him/her.
- My superior consistently drives for better outcomes.
- My superior excels in selecting and developing good people.
- My superior consistently helps subordinates produce high quality work.
- My superior is able to establish and communicate common goals.
- My superior uses cross-cultural networks to produce better outcomes.
- My superior uses cultural differences to produce better outcomes.
- My superior is effective at managing important external relationships to meet goals and expectations.

- My superior is a good judge of character, even across cultures.
- My superior is able to motivate subordinates with different cultural backgrounds.

Trust

- We trust each other.
- Coalition partners are capable at their job.
- Coalition partners keep their word.
- Coalition partners know what to expect from each other.

Diversity

- Cultural differences are valued.
- Diverse opinions are valued.
- Cultural similarities are beneficial to our organization.

Improvement Orientation

- The effectiveness of work processes is monitored.
- We actively look for better ways of working.
- We are open to changes that will improve our organization.
- We often take the initiative to improve our work processes.

Information

- We seek information as needed.
- We provide information in a timely manner.
- We receive information in a timely manner.
- The information we receive is both accurate and up to date.
- We share information with each other regardless of rank.

Decision making

- Organizational decisions are made in a timely manner.
- Organizational decisions are implemented quickly to achieve desirable results.
- A variety of options are explored before decisions are made.
- We have agreed methods for decision making.

Awareness

- We frequently experience misunderstandings.
- We are aware of each other's responsibilities.
- We are unsure about how to accomplish joint tasks.
- We do not know what each other's roles are in relation to accomplishing joint tasks.
- We understand how our objectives/actions contribute to the mission.

- Personnel understand their objectives/tasks.
- The mission is clear.

Effectiveness

- The quality of our coalition team's output is very high.
- When high priority work arises, my coalition team does an outstanding job in handling these situations.
- The coalition team's performance in comparison to similar coalition teams is very high.

Annex G – UNDERSTANDING FACTORS THAT INFLUENCE COALITION TEAMWORK

Paper presented at the Symposium SAS-081/RSY on "Analytical Support to Defence Transformation" in Sofia, Bulgaria, 26-28 April 2010

Yantsislav Yanakiev
Defence Advanced Research Institute (DARI)
G.S. Rakovski National Defence Academy
82 Evlogi and Hristo Georgievi Blvd.
1504 Sofia
BULGARIA

yanakievy@md.government.bg

Arwen E. Hunter
U.S. Army Research Institute for the Behavioural and Social Sciences
ATTN: DAPE-ARI-OP
Building 459, Room 117
Aberdeen Proving Ground
MD 21005-5425
UNITED STATES

Arwen.Hunter@us.army.mil

Janet L. Sutton
U.S. Air Force Research Laboratory
AFMC 711 HPW/RHXB
Wright-Patterson AFB, OH 45433
UNITED STATES

Janet.Sutton@wpafb.af.mil

ABSTRACT

Supporting the SAS-081/RSY focus on cognitive and human aspects of defence transformation and the HFM RTG-163 focus on improving organizational effectiveness in coalition operations, this paper presents results from research aimed at identifying factors that are critical for effective cooperation between coalition partners. Past research on teams and organizations is utilized to propose a framework for studying and enhancing collaboration between coalition partners. The sample used was Bulgarian and U.S. military personnel engaged in a tactical-level, joint military training exercise (n = 145) held at the Novo Selo Army Training Range, Sliven, Bulgaria. In the framework of the NATO Research and Technology Organization (RTO), this research was implemented by the U.S. Army Research Institute for the Behavioural and Social Sciences (ARI), the U.S. Air Force Research Laboratory (AFRL: 711th Human Performance Wing), and the Bulgarian Defence Advanced Research Institute (DARI) at G.S. Rakovski National Defence Academy. Financial support was provided, in part, by the NATO Research and Technology Agency (RTA). Implications for multi-cultural collaboration are discussed.

G.1 INTRODUCTION

G.1.1 NATO Current Operations

As NATO continues to expand its presence across the full spectrum of crisis management operations, coalition partnerships are becoming increasingly more widespread and collaboration between coalition partners is held to higher and higher standards of performance by the global military community. Representative of this transformation are NATO operations and coalition of willing in Afghanistan, Kosovo, Iraq, Somalia, the Mediterranean, off the Horn of Africa, which include increased NATO and coalition presence. With a growing need to collaborate with coalition partners in support of full spectrum

operations, research in the cognitive and social science domains is important to help advance the understanding of human factors that facilitate collaboration in multi-cultural coalitions.

G.1.2 Goals of Paper

In response to the operational needs described above, the goal of this research is to identify factors that are critical for effective collaboration between coalition partners during joint exercises and operations. The latest research results of U.S. and Bulgarian teams engaged in a tactical-level bilateral training exercise are shared in support of transformation and management in the new security environment with a focus on cognitive and human aspects of defence transformation. Since 2006, an agreement has been in place between the U.S. and Bulgarian governments to enhance defence cooperation through security cooperation exercises, joint/combined training activities, humanitarian and disaster relief activities, contingency operations, etc. (see http://bulgaria.usembassy.gov/odc.html for official document). Among other purposes, these exercises are used to develop skills necessary for task executions during NATO operations and to improve interoperability between Bulgarian and U.S. military. The current research explores the human and organizational factors that affect coalition teamwork, including information sharing, collaboration, and coalition team effectiveness, by studying U.S. and Bulgarian military personnel engaged in combined training.

G.1.3 Model of Organizational Effectiveness for Coalition Teamwork

Multi-national operations require collaboration and information sharing between many different teams of individuals that extend from diverse cultural backgrounds (organizational and national) [6]. In this paper, a targeted approach to understanding and enhancing coalition team effectiveness is taken, with a focus on the factors that influence basic team collaboration through information sharing. Others have taken a similar approach, suggesting that effectiveness is tied to the ability to acquire lacking information and to manage the information possessed [9]. Correspondingly, Galbraith [10] supports the assumption that information sharing, quick and timely decision making, and developing shared awareness are needed to meet organizational goals effectively.

Many models of inputs, processes, and outcomes within multi-national teams exist. This research combines critical factors of those models that relate to information sharing, collaboration, and ultimately, effectiveness. More specifically, focus is placed on team inputs and processes related to information sharing between coalition partners coming from diverse organizational and cultural backgrounds, that are expected to affect the collaborative capacity of the coalition. While many existing models focus on various aspects of teamwork, our model focuses on individual and organizational factors influencing coalition team effectiveness through team information sharing and collaborative processes.

G.1.3.1 Performance, Role Interdependence, Information Sharing Model (PRISM)

A model of effectiveness within complex teams was adapted from existing team models [15],[18],[19] by researchers at the U.S. Army Research Institute to represent a sub-set of team inputs and processes affecting the relationship between information sharing (i.e., communication) and performance (see Figure G-1) [12]. The PRISM model can be applied at a team, multi-team, and organizational level, depending on complexity of the distributed operations. Multiple studies are being conducted to examine different aspects of the model. Past research has demonstrated support for some of these relationships (e.g., interdependence moderates the relationship between trust and information sharing), but more research is needed to better understand the multiple factors that influence performance in complex, distributed operations [19].

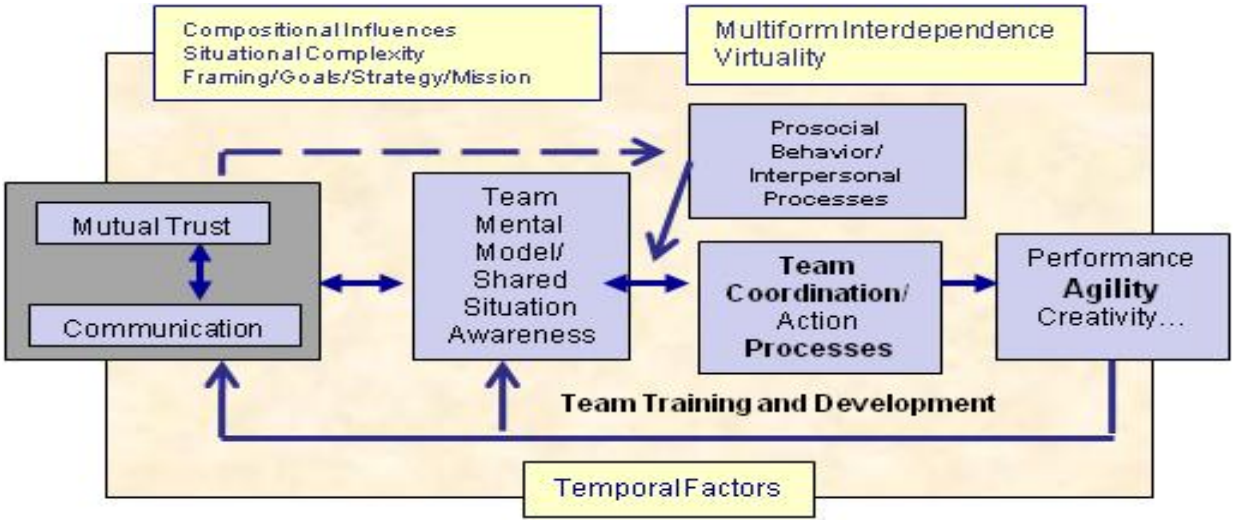

Figure G-1: The Performance, Role Interdependence, Information Sharing Model (PRISM). The PRISM was Adapted from Several Existing Team Models [15],[18],[19].

This model was adopted for use in the current study to help identify some of the critical factors influencing information sharing, collaboration, and ultimately coalition team effectiveness within a multi-national coalition context. The model suggests that individual attitudes, cultural influences, and trustworthiness are key influencers of information sharing and collaboration between coalition partners. In turn, information sharing affects team states and processes such as trust and cohesion, which ultimately impact effectiveness. Additionally, the actual and perceived interdependence among the coalition partners is likely to change the nature and importance of some of these relationships, modifying the criticality of information sharing and collaboration for individual members of the coalition. The propositions of this model led to the selection of scales that attempted to measure the key constructs inherent in the reciprocal process described above, with the goal of better understanding the critical aspects of coalition teamwork that lead to organizational effectiveness.

G.1.3.2 Inter-Organisational Collaborative Capacity

The PRISM model identifies many constructs affecting coalition team effectiveness through information sharing and collaboration within coalition teams, but focuses on what unfolds when a team is formed. Identifying the factors that individuals and organizations bring to the team that influence information sharing and collaboration is also important to this research. Recently, a model of Inter-organisational Collaborative Capacity (ICC) was proposed by researchers at the Naval Postgraduate School [13] which provides a framework for understanding the individual and organizational factors that are brought to a newly formed team, which are likely to influence team collaboration.

As defined in the initial research, ICC is the capability of organizations (or a set of organizations) to enter into, develop, and sustain inter-organisational systems in pursuit of collective outcomes. The model of ICC was generated through theoretical and empirical research aimed at linking factors inhibiting and promoting collaboration to each of [10] organizational sub-system domains. This approach is similar to other NATO research on organizational effectiveness, which also uses the Galbraith model of organizational design to organize elements of the organization that may impact effectiveness [3]. From this model, a questionnaire was developed to systematically assess an organization (or organizational set's) collaborative capacity. This questionnaire was used in the current study to examine individual and organizational factors existing prior to the multi-national training exercise that are likely to affect collaboration.

G.1.4 Summary

The goal of this research is to identify factors important for enhancing coalition team effectiveness in joint exercises and operations with a focus on individual and organizational factors influencing collaboration. Some factors identified by the PRISM model are assessed to examine attitudes and behaviours that unfold as the team is formed. Additional factors (both individual and organizational) existing prior to the multi-national training exercise are also examined and expected to influence coalition team effectiveness. These individual and organizational factors are explored in terms of their relationship with perceived coalition team effectiveness within both U.S. and Bulgarian samples.

G.2 METHODS

G.2.1 Participants

The data was collected in September 2009 at the end of a joint U.S. – Bulgarian tactical-level training exercise on "Novo Selo" Army training range in Bulgaria. A total of 145 military personnel from both U.S. (n = 81) and Bulgaria (n = 64) provided responses to the questionnaire assessing factors expected to influence coalition teamwork. U.S. respondents were 94% male, with a mean age of 28. Bulgarian respondents were 100% male, with a mean age of 29. Thirty-four percent of U.S. Soldiers obtained a degree higher than a high school diploma, while 20% of Bulgarian Soldiers held degrees at the undergraduate level or above. In both the U.S. and Bulgarian samples, approximately 50% of respondents reported that they had previous experience being deployed in a multi-national headquarters.

G.2.2 Measures

Questionnaires, consisting of 77 self-report items, were administered to participants in their native language. For small groups ranging in size from 6 – 20 persons, two native-English speaking researchers monitored native-English speaking participants and one bilingual (Bulgarian/English) Bulgarian researcher monitored native-Bulgarian speaking participants while they completed their questionnaires. Questions from participants were answered immediately and privately. All items on the questionnaire were rated on a 7-point Likert-type scale ranging from -3 to +3 as follows: -3 (Strongly Disagree), -2 (Disagree), -1 (Moderately Disagree), 0 (Neither Agree nor Disagree), +1 (Moderately Agree), +2 (Agree), and +3 (Strongly Agree).

The constructs assessed were identified through the theoretical models described above as critical factors influencing collaboration between coalition partners. The first 12 scales were modified from the Inter-organisational Collaborative Capacity questionnaire [13]. These scales assess constructs identified as critical for the capability of organizations (or a set of organizations) to enter into, develop, and sustain inter-organisational systems in pursuit of collective outcomes. The 12 scales are described below:

- *Need to Collaborate* – A felt need for or motivational energy and effort directed toward collaboration with other coalition members.
- *Strategic Collaboration* – Emphasizes establishing and addressing goals for collaboration and considering the interest of other coalition members in planning. Focus is placed on the role of leadership in addressing inter-organisational coalition goals and conferring with leaders of other organizations.
- *Resource Investment in Collaboration* – Investing, committing, or assigning budget, resources, and personnel to coalition collaboration.
- *Structural Flexibility* – The degree to which respondents perceive that their organization is flexible and responsive, quickly forming and modifying policies, processes, procedures, and partnerships.

- *Reward Systems* – Individuals' perceptions of the consequences of their behaviour in terms of their own personal pay-offs. The items assess the degree to which collaborative work, activities, and talents result in rewards, career advancement, and promotion.
- *Metrics for Collaboration* – The degree to which an organization has identified or established measurement criteria and performance standards to assess coalition collaboration efforts.
- *Information Sharing Norms* – Lateral mechanisms and lateral processes within the organization that provide norms for information sharing. Higher scores reflect organizations with stronger norms for greater information sharing.
- *Collaborative Learning* – The degree to which the organization commits resources to training, works with coalition partners to identify lessons learned, and develops strong norms for learning from coalition partners.
- *Social Capital* – The degree to which organizational members take the initiative to build relationships and know who to contact within other coalition partner organizations.
- *Individual Collaborative Capacity* – Skills, capabilities, expertise, understanding, and knowledge of other coalition partners' work; willingness to engage in shared decision-making and collaboration.
- *Barriers to Collaboration* – Aspects of history, individual collaborative capacity, role conflict, policies, and unique requirements that create barriers to effective coalition collaboration. A high score on this scale indicates more barriers to collaboration.
- *Support to Coalition Team* – Assesses the degree of support and authority given to coalition teams by the higher organization.

The next 8 scales were constructs identified in the PRISM model, as related to performance in complex teams. All variables in the PRISM model were not measured because the survey methodology utilized in the current study was not deemed adequate for assessing these constructs (e.g., shared mental models). However, particular variables from the model were measured where appropriate and validated scales were utilized in the past and shown to relate to team performance as suggested by the PRISM model. These 8 scales are described below:

- *Perceived Interdependence* – Assesses the degree of reciprocal interdependence required to successfully complete tasks, including perceptions of the degree that the responder needs to depend on coalition partners for information and vice versa. Higher scores reflect a greater degree of perceived interdependence between coalition team members [16],[17].
- *Information Sharing* – Self-reported rating of information sharing behaviours occurring between coalition partners throughout the exercise. Higher scores reflect the perceptions that more information sharing occurred between coalition partners [5],[14],[19].
- *Task Cohesion* – Assesses commitment or attraction to the group task or goal. Higher scores reflect greater engagement in and enjoyment of the coalition team tasks [7].
- *Interpersonal Cohesion* – Defined as attraction to or liking of the group. Scores reflect how much the respondent likes or gets along with coalition team members, with higher scores reflecting greater liking of and similarity to coalition team members [7].
- *Trustworthiness*: Assesses a quality of the trustee as perceived by the trust or relating to one of the four dimensions of trust as defined by Adams and colleagues [1],[2] and Blais [4].
    - *Benevolence* – Judgment that the trustee has a genuine concern for the welfare of others.
    - *Integrity* – Judgment of the trustee's morale and ethics, credible communications, and a strong sense of justice.

- *Predictability* – Judgment of the trustee's consistency of work and action.
- *Competence* – Judgment of the trustee's competence in performing their job.

Finally, two additional scales were included to assess satisfaction of coalition team members and perceived coalition effectiveness [8]. The purpose of including these measures was to examine outcomes associated with coalition team collaboration. The two scales are described below:

- *Job Satisfaction* – Indicates the degree of satisfaction the respondent has with his or her current job. Higher scores reflect more satisfaction.
- *Coalition Team Effectiveness* – Reflects the degree to which the coalition team is perceived to be productive and effective in accomplishing its mission. Higher scores reflect perceptions that the coalition team is performing well.

G.3 RESULTS

The methodology applied was aimed at assessing organizational factors related to collaboration between coalition partners. Results are presented separately for the U.S. and Bulgarian samples and compared to examine differences in means between Nations on the factors assessed, as well as differences in patterns of correlations between critical relationships suggested by past research (e.g., PRISM, ICC).

G.3.1 Reliability

The analysis of the data presented in Table G-1 shows high to very high reliability of the 12 scales assessing inter-organisational collaborative capacity. The Cronbach's alpha coefficients for the data collected from U.S. military vary between 0.67 and 0.92. For the data collected from the Bulgarian military on the same scales, the Cronbach's coefficients vary between 0.56 and 0.87, also demonstrating high reliability. On the whole, the reliability coefficients for the Bulgarian sample are lower in comparison to the alpha coefficients for the U.S. sample, which might result from the translation of the questionnaire in the Bulgarian language and probable influence of the cultural differences on understanding of the different constructs. Despite this, the alpha coefficients are satisfactory and the scales can be used as a reliable basis for analysis. We should mention that the reliability coefficients in this survey are close to the coefficients reported by the authors of the original questionnaire, which vary between 0.75 and 0.88.

Table G-1: Means, Standard Deviations, and Coefficient Alpha for the Scales.

Scale	Nation	Mean	Standard Deviation	*t*-Value	# Items	Coefficient Alpha
Need to Collaborate	USA	2.07	1.06	1.98*	3	.89
	BGR	1.72	1.03			.71
Strategic Collaboration	USA	1.62	1.14	.34	5	.92
	BGR	1.56	.86			.83
Resource Investment in Collaboration	USA	1.31	1.53	2.98*	3	.87
	BGR	.57	1.42			.76
Structural Flexibility	USA	1.51	1.10	3.28*	4	.82
	BGR	.89	1.18			.77
Reward Systems	USA	.29	1.51	-1.77	4	.89
	BGR	.71	1.37			.81
Metrics for Collaboration	USA	.52	1.46	-1.13	2	.79
	BGR	.80	1.42			.87
Information Sharing Norms	USA	.91	1.45	-1.37	3	.88
	BGR	1.21	1.00			.56
Collaborative Learning	USA	1.25	1.39	2.70*	3	.84
	BGR	.61	1.46			.81
Social Capital	USA	1.24	1.32	-.64	2	.67
	BGR	1.38	1.16			.66
Individual Collaborative Capacity	USA	1.33	1.11	-1.57	7	.92
	BGR	1.59	.84			.87
Barriers to Collaboration	USA	.08	1.19	1.72	5	.78
	BGR	-.25	1.09			.69
Support to Coalition Team	USA	.70	1.24	-.35	2	.70
	BGR	.77	1.22			.74
Perceived Interdependence	USA	.72	1.68	-3.79*	3	.86
	BGR	1.65	1.14			.86
Information Sharing Behaviour	USA	.78	1.46	-2.04*	2	.68
	BGR	1.21	.92			.70
Task Cohesion	USA	1.37	1.12	-2.51*	5	.87
	BGR	1.77	.71			.79
Interpersonal Cohesion	USA	1.50	.97	-1.02	5	.83
	BGR	1.65	.72			.78
Trustworthiness – Benevolence	USA	1.09	1.28	-1.85	3	.90
	BGR	1.44	.94			.83
Trustworthiness – Integrity	USA	1.01	1.28	-1.56	3	.93
	BGR	1.30	.92			.73
Trustworthiness – Predictability	USA	.92	1.45	-.24	3	.96
	BGR	.97	1.07			.89
Trustworthiness – Competence	USA	1.13	1.18	-1.48	3	.94
	BGR	1.39	.89			.75
Job Satisfaction	USA	1.36	1.40	-3.22*	3	.65
	BGR	1.92	.82			.72
Coalition Effectiveness	USA	1.00	1.40	-1.83	3	.85
	BGR	1.37	.82			.73

Note: * indicates that *t*-value is significant at $p < .05$.

For the 8 scales assessing constructs identified in the PRISM model, the alpha coefficients demonstrate high reliability for both the U.S. and the Bulgarian samples. They vary from 0.68 to 0.94 for the data on US sample and 0.70 to 0.89 for the data on Bulgarian sample.

Finally, the 2 scales from DEOMI questionnaire "Job satisfaction" and "Perceived coalition effectiveness" also demonstrate high to very high reliability. Indicative in this regard are alpha coefficients 0.65 and 0.85 for US data and 0.72 and 0.73 for the Bulgarian data.

G.3.2 Differences in Means

The comparison of the arithmetic mean scores on the scales over the U.S. and the Bulgarian samples (Table G-1) shows significant differences on several dimensions. The U.S. respondents score higher than the Bulgarians on the scales "Need to collaborate" ($p = 0.050$), "Resource investment in collaboration" ($p = 0.003$), "Structural flexibility" ($p = 0.001$) and "Collaborative learning" ($p = 0.008$). The Bulgarian respondents score higher in comparison to the US military on the scales "Perceived interdependence" ($p = 0.000$), "Information sharing behaviour" ($p = 0.043$), "Task cohesion" ($p = 0.013$) and "Job satisfaction" ($p = 0.002$). There are no significant differences in the arithmetic mean scores on the rest of the scales used in the survey. Figure G-2 shows the distribution of means for both U.S. and Bulgarian samples on each scale.

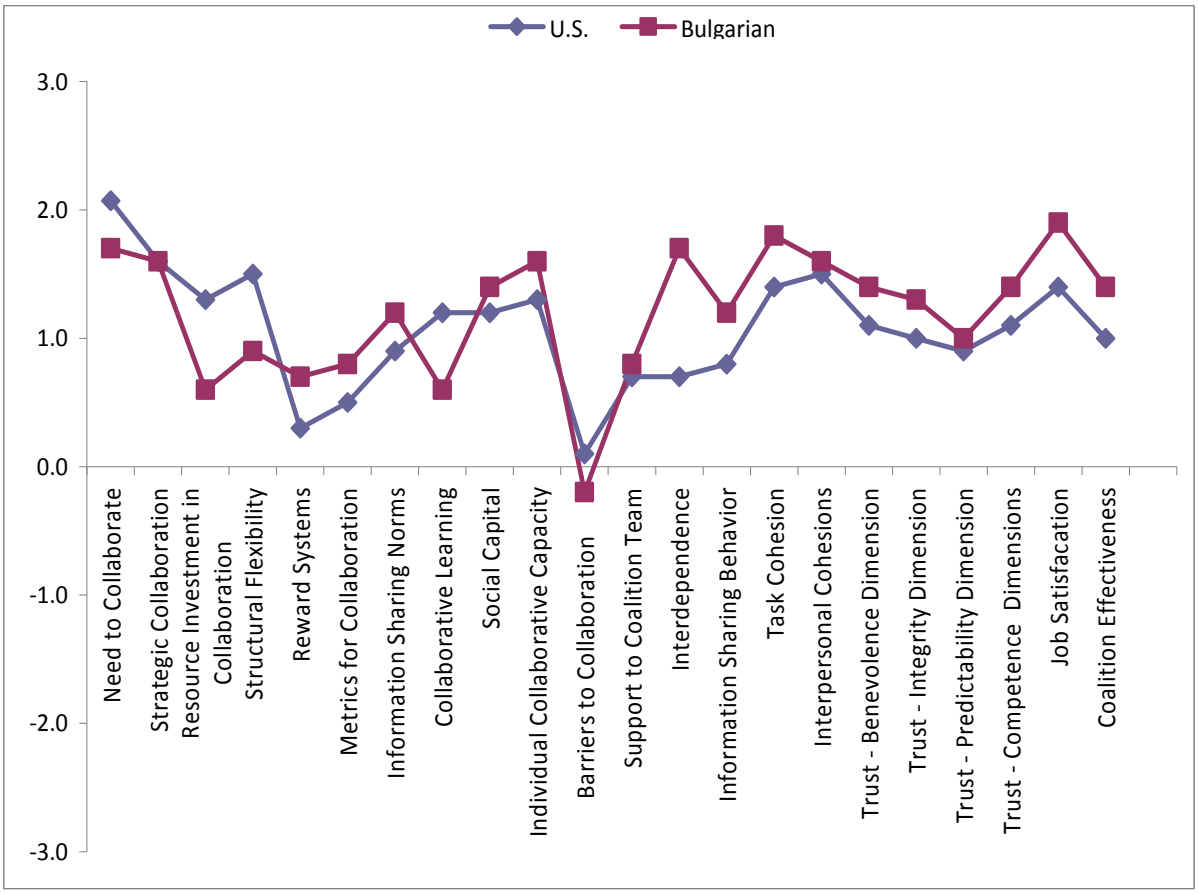

Figure G-2: Differences in Means Between U.S. and Bulgarian Samples.

G.3.3 Correlations

As mentioned above, it is important to identify factors that individuals and organizations bring to the coalition team that are related and influence information sharing and collaboration in multi-national/ bilateral coalitions. Therefore, we focused our attention on the relationships between the ICC scales that measure the capacity for inter-organizational collaboration as a prerequisite for achieving the tasks of the coalition and processes/outcomes of this cooperation such as information sharing, trust, perceived task cohesion and perceived coalition effectiveness. In addition, we focus on differences between the two samples of U.S. and Bulgarian military, participating in the research.

The first correlation analysis presented in Table G-2 examines the relationship between the individual and organizational factors present prior to the coalition team formation (ICC scales) and self-reported information sharing behaviour between coalition partners. The analysis of the data shows that all of the correlation coefficients between the ICC scales and the information sharing scale are significant at level 0.05 for both samples. With respect of the U.S. sample, the strongest relationships with information sharing include the Individual Collaborative Capacity scale (r = 0.663), Social Capital scale (r = 0.606), Collaborative Learning scale (r = 0.564), Information Sharing Norms scale (r = 0.553), and Reward Systems scale (r = 0.503). Generally, the pattern of relationships with respect to the Bulgarian sample is close to the U.S. sample. The strongest relationships with information sharing include the Individual Collaborative Capacity scale (r = 0.705), Information Sharing Norms scale (r = 0.650), Social Capital scale (r = 0.564), Strategic collaboration scale (r = 0.525), Metrics of collaboration scale (r = 0.506), and Collaborative Learning scale (r = 0.550).

Table G-2: Correlations Between the ICC Scales and the Information Sharing Scale.

Information Sharing Behaviour Scale by ICC Scales	**Significant Correlations, n = 81, p < 0.05 U.S. Data**	**Significant Correlations, N = 64, p < 0.05 BGR Data**
Need to Collaborate	0.283	0.326
Strategic Collaboration	0.359	0.525
Resource Investment	0.314	0.314
Structural Flexibility	0.380	0.419
Reward Systems	0.503	0.345
Metrics for Collaboration	0.491	0.506
Information Sharing Norms	0.553	0.650
Collaborative Learning	0.564	0.500
Social Capital	0.606	0.564
Individual Collaborative Capacity	0.662	0.705
Barriers to Collaboration	-.0.314	-0.315
Support to Coalition Team	0.512	0.455

The only difference between the two samples is with respect to the U.S. military, the analysis suggested the existence of strong correlation between Reward Systems scale and information sharing behaviour, while with respect to the Bulgarian sample this correlation is low. Conversely, in the Bulgarian sample a

strong correlation was found between the strategic collaboration and information sharing behaviour, while in the U.S. sample this correlation was low.

Next, we examine the relationship between each of the dimensions of trustworthiness and information sharing behaviour. The PRISM model suggests that a reciprocal relationship will exist between information sharing and trust, such that perceptions of trustworthiness will lead to more information sharing; and in turn, information sharing is likely to affect perceptions of the trustee in terms of benevolence, integrity, predictability, and competence. The analysis of the data revealed moderate correlations between the information sharing behaviour scale and the trustworthiness scales (Table G-3). There are no significant differences in the pattern of relationships between the information sharing behaviour scale and the four scales measuring different dimensions of trustworthiness between the U.S. and the Bulgarian samples.

Table G-3: Correlations Between the Information Sharing and Trustworthiness.

Information Sharing Behaviour Scale by Trustworthiness Scales	**Significant Correlations, n = 81, p < 0.05 U.S. Data**	**Significant Correlations, n = 64, p < 0.05 BGR Data**
Benevolence	0.543	0.450
Integrity	0.417	0.458
Predictability	0.425	0.451
Competence	0.459	0.425

The PRISM model suggests that the reciprocal relationship between trust (operationalised here as perceptions of trustworthiness) and information sharing behaviour will affect team cohesion. Table G-4 presents correlations including each of the dimensions of trustworthiness and information sharing behaviour with task and interpersonal cohesion for both the U.S. and Bulgarian samples. The results demonstrate that all dimensions of trustworthiness are related to both task and interpersonal cohesion for both the U.S. and Bulgarian samples. Additionally, information sharing is significantly related to task and interpersonal cohesion in both samples. For both samples, benevolence had the strongest relationship with task cohesion.

Table G-4: Correlating Cohesion with Trustworthiness and Information Sharing.

	Task Cohesion		**Interpersonal Cohesion**	
Cohesion Scale by Trustworthiness and Information Sharing	**Significant Correlations, n = 81, p < 0.05 U.S. Data**	**Significant Correlations, n = 64, p < 0.05 BGR Data**	**Significant Correlations, n = 81, p < 0.05 U.S. Data**	**Significant Correlations, n = 64, p < 0.05 BGR Data**
Benevolence	0.716	0.742	0.738	0.622
Integrity	0.608	0.563	0.595	0.637
Predictability	0.578	0.458	0.495	0.564
Competence	0.655	0.567	0.563	0.533
Information Sharing	0.620	0.598	0.501	0.514

While the PRISM model suggests that cohesion will be influenced by trust and information sharing, the model also suggests that other individual, team, and organizational factors may also influence these relationships. Because the ICC scales were developed to predict collaborative capacity, they are likely to relate to other variables in the PRISM model that lead to enhanced collaboration, including task cohesion. The data, presented at Table G-5 suggests the existence of a strong relationship between the perceived task cohesion scale and the ICC scales. As far as the U.S. sample is concerned, the strongest relationships are between task cohesion scale and correspondingly Support to Coalition Team scale (r = 0.657), Individual Collaborative Capacity scale (r = 0.662), Social Capital scale (r = 0.632), Information Sharing Norms scale (r = 0.622), Collaborative Learning scale (r = 0.620), and Structural Flexibility scale (r = 0.526). With respect to the Bulgarian sample the strongest relationships are between task cohesion scale and correspondingly, Strategic collaboration scale (r = 0.591), Individual Collaborative Capacity scale (r = 0.552), Information Sharing Norms scale (r = 0.522) and Social Capital scale (r = 0.477).

Table G-5: Correlations Between the ICC Scales and Task Cohesion Scale.

Task Cohesion Scale by ICC Scales	**Significant Correlations, n = 81, p < 0.05 U.S. Data**	**Significant Correlations, n = 64, p < 0.05 BGR Data**
Need to Collaborate	0.411	0.423
Strategic Collaboration	0.427	0.591
Resource Investment	0.347	0.268
Structural Flexibility	0.526	0.338
Reward Systems	0.497	0.401
Metrics for Collaboration	0.437	0.289
Information Sharing Norms	0.622	0.522
Collaborative Learning	0.620	0.414
Social Capital	0.632	0.477
Individual Collaborative Capacity	0.662	0.552
Barriers to Collaboration	-0.309	-0.269
Support to Coalition Team	0.657	0.382

Finally, critical to this research is the idea that the factors examined will ultimately relate to coalition team effectiveness. To begin to examine whether this variables do, indeed, relate to coalition team effectiveness, self-reported ratings of respondents' perceptions of effectiveness are examined in relation to the other research variables. Results of this analysis are presented in Table G-6.

Table G-6: Correlations Between the ICC Scales and Perceived Coalition Effectiveness Scale.

Perceived Coalition Effectiveness Scale by ICC Scales	Significant Correlations, n = 81, p < 0.05 U.S. Data	Significant Correlations, n = 64, p < 0.05 BGR Data
Need to Collaborate	0.346	–
Strategic Collaboration	0.416	0.466
Resource Investment	0.333	–
Structural Flexibility	0.458	0.292
Reward Systems	0.463	0.260
Metrics for Collaboration	0.414	–
Information Sharing Norms	0.449	0.312
Collaborative Learning	0.505	0.311
Social Capital	0.426	0.430
Individual Collaborative Capacity	0.558	0.495
Barriers to Collaboration	–	–
Support to Coalition Team	0.555	0.501
Perceived Interdependence	0.251	0.377
Information Sharing	0.488	0.430
Task Cohesion	0.677	0.613
Interpersonal Cohesion	0.660	0.514
Benevolence	0.630	0.664
Integrity	0.499	0.457
Predictability	0.458	0.344
Competence	0.512	0.653

In regards to the ICC scales, strong to moderate correlations are found between perceived coalition effectiveness among the U.S. personnel participating in the research and the scales Individual Collaborative Capacity (r = 0.558), Support to Coalition Team (r = 0.555), Information Sharing Norms (r = 0.449), Reward Systems (r = 0.463), and Structural Flexibility (r = 0.458). With respect to the Bulgarian sample the strongest correlation was found between perceived coalition effectiveness and the scales Support to Coalition Team (r = 0.501), Individual Collaborative Capacity (r = 0.495), Strategic collaboration scale (r = 0.466) and Social capital scale (r = 0.430).

Significant differences exist in the patterns of the correlations between perceived coalition effectiveness scale and the ICC scales between the U.S. and the Bulgarian samples. This result might be indicative of different understanding and different perception of the coalition effectiveness among the Bulgarian and the U.S. military personnel, participating in the exercise. The existing data does not give enough ground to identify the factors that probably shape these differing perceptions, an important topic for further collaborative research efforts.

In regards to the factors identified in the PRISM model, all variables were significantly related to perceived coalition effectiveness in both the U.S. and Bulgarian samples. Overall, the correlations between the PRISM variables and perceived coalition effectiveness were slightly stronger than the ICC scales. This pattern of relationships makes sense, as the PRISM model suggests relationships that are more directly related to collaboration and coalition team effectiveness than the ICC scales.

G.4 DISCUSSION

The research presented takes an initial look at factors likely to influence coalition team effectiveness. Focus was placed on reliability of the scales, mean differences between U.S. and Bulgarian samples, and correlations between the research variables. More directed analyses of these relationships are needed in future research, but this preliminary exploration into these factors begins to suggest future research topics for parties interested in enhancing coalition team effectiveness.

Differences in means were found on some of the research variables between U.S. and Bulgarian samples. Moreover, these mean differences seemed to follow a pattern, where U.S. generally scored higher on the ICC scales, which assessed individual and organizational factors existing prior to the multi-national training exercise that were likely to affect collaboration. A higher score on the need to collaborate scale shows that the US military perceive their organization as one for which coalition collaboration is a priority, it understands the importance to collaborate with coalition partners to achieve its mission and value the benefits of coalition cooperation. In comparison to the Bulgarian respondents, U.S. respondents seem to perceive the U.S. military as an organization that invests more resources to achieve successful coalition cooperation and is more flexible to adapt procedures and make cooperation successful. U.S. respondents also indicated perceiving the U.S. military as more of a learning organization that highly values lessons learned process and considers each coalition cooperation as a contribution to mutual learning.

Conversely, the Bulgarian means were generally higher for the scales assessing constructs from the PRISM model, which focus on what unfolds once the coalition team is formed in terms of factors affecting coalition team effectiveness through information sharing and collaboration. Bulgarian respondents demonstrate a high level of perceived interdependence between coalition partners to achieve the goals of the exercise/operation both with respect to implementation of the tasks and particularly as far as the exchange of information is concerned. Additionally, the Bulgarian military share the perception that the coalition partners understand the role of timely information exchange and do everything possible to keep the partners up to date about their activities; they feel that their organization shares information openly with the coalition partners. Moreover, the Bulgarian respondents perceive the coalition collaboration as meaningful and important for both sides and therefore, consider the cohesion among the coalition team as high; working with coalition partners is enjoyable and rewarding. Finally, the Bulgarians demonstrate high level of job satisfaction particularly working with U.S. partners in this exercise.

These findings provide insight into problems that need to be addressed within organizations in order to enhance coalition effectiveness in the future. The U.S. respondents seem to indicate that they have a greater capacity for collaboration in terms of the culture of the U.S. military as an organization and the resources it provides. However, once engaged in the exercise, the U.S. respondents may have benefitted from a greater understanding of the interdependencies inherent in the joint training exercise (e.g., How can the coalition partnership be enhanced in the joint training example through greater information sharing? What information should be shared with whom and for what reason?). Conversely, the results of this research suggest that Bulgarian respondents have a better understanding of the interdependencies, want to share available information, and have more positive attitudes toward the coalition team once engaged, but may benefit from organizational cultural changes such as increased flexibility and resources to collaborate. No definitive conclusions can be drawn from this data, but this research begins to suggest

ways of improving coalition team effectiveness. Future research should also examine generalizability to other types of coalition teamwork to see if similar differences are found between other Nations.

In general, the correlations between the research variables were consistent with expectations. Factors were identified by the PRISM model and research on inter-organisational collaborative capacity that were expected to relate perceived coalition effectiveness. The significant correlations presented in the results section suggest that the constructs identified are indeed likely to predict coalition team effectiveness through their relationships with information sharing and collaboration. Overall, the correlations between the PRISM variables and perceived coalition effectiveness were slightly stronger than the ICC scales. Because the PRISM model suggests relationships that are more directly related to collaboration and coalition team effectiveness than the ICC scales, this pattern of relationships was expected. Plans for future research include approaching this problem with a more sophisticated statistical analysis to examine the fit of a model developed as a combination of PRISM and the ICC variables. This will be useful in better understanding the relationships between these variables and identifying the most useful predictors of coalition team effectiveness. Further refinements to the scales used to measure these constructs, including means of measuring constructs more objectively, as well as more precise outcome measures are important to further validate the model.

G.4.1 Military Benefits

This research utilized past theoretical and empirical research to identify factors considered critical for coalition team effectiveness, including organizational and national cultural differences relating to information sharing and trust, fostering collaboration among coalition partners. The findings from this research could be used to improve military training and the organization of coalition teams. For example, organizational structure may inhibit information sharing in current coalition teamwork. Additionally, individual attitudes toward the need for collaboration and differences in perceived interdependence between coalition partners may be barriers to coalition teamwork. By exploring these critical factors, we can begin to understand areas that should be targeted for improving organizational effectiveness in coalition operations.

Additionally, the identification of these factors influencing collaboration in coalition teams also gives rise to better means of assessing coalition team effectiveness, or likelihood of success in future NATO missions. This research, along with future projects, could be utilized to develop a method of assessing the readiness of coalition team members prior to beginning a mission and training could be targeted to address areas of improvement.

G.5 REFERENCES

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Organisational effectiveness
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Sharing of information
Training
Trust

14. Abstract

The NATO Research and Technology Organization (RTO) Human Factors and Medicine (HFM) Panel Task Group (RTG) – 163 titled "Improving the Organisational Effectiveness of Coalition Operations" was established to identify organisational and cultural factors critical to effective cooperation in coalition operations with particular focus on organisational effectiveness of NATO operational level Headquarters (HQs). More precisely, the goals of the HFM-163 – RTG were: 1) To identify critical factors to effective coalition operations (e.g., leadership, national culture, organizational culture/structure, information sharing) using extant data and research literature; 2) To investigate potential models and tools for understanding, explaining, and measuring different aspects of effective adaptation and cooperation in multi-national coalitions; 3) To make recommendations regarding improvement of education and training of NATO and partner countries' militaries for coalition operations.

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Defence Industry & Research General Directorate, Research Directorate
Fakinos Base Camp, S.T.G. 1020
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