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CCSS report
CCSS-05-003

NATO Future Worlds
An Input into the NATO Long-Term Requirements Study

Clingendael Centre for Strategic Studies

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Contents

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Abbreviations

CCSS	Clingendael Centre for Strategic Studies
CMF	Capability Management Framework
DRR	Defence Requirements Review
ESDI	European Security and Defence Initiative
ESDP	European Security and Defence Policy
EU	European Union
IFI	International Financial Institutions
LTCR	Long Term Capability Requirements
LTRS	Long Term Requirements Study
MFA	Ministry of Foreign Affairs
MoD	Ministry of Defence
NC3A	NATO Consultation, Command and Control Agency
OECD	Organisation for European Collaboration and Development
TNO	Netherlands Organisation for Applied Scientific Research
TNO DV	TNO Defence Security and Safety

Figures

1.   Introduction

1.1   Introducing the Clingendael Centre for Strategic Studies

The Clingendael Centre for Strategic Studies (CCSS) was established in 2003 and is a joint venture that combines the expertise of two internationally renowned organizations: the Netherlands Institute of International Relations Clingendael and the Netherlands Organization for Applied Science, TNO. It offers a broad scientific spectrum ranging from Technology to Foreign, Security and Defence Analysis.

The core mission of The Clingendael Institute is to promote the understanding of international affairs. Special attention is devoted to European integration, transatlantic relations, international security, conflict studies, policy making on national and international energy markets, negotiations and diplomacy, and to the United Nations and other international organisations.

TNO is a knowledge organisation for companies, government bodies and public organisations. TNO is versatile and consists of five core areas. As one of the five core areas TNO Defence, Security and Safety supports Defence in all its activities. In this framework the main themes are Military Operations, Military Resources, Command & Control and Operational Decision-making, Threat and Protection, as well as Training and Education.

1.2   NATO's Defence Requirements Review and the Long-Term Requirements Study

1.2.1   The Defence Requirements Review (DRR)

The DRR is a tool used by the NATO Strategic Commands (SCs) to derive the minimum military requirements needed to achieve NATO's stated level of ambition as articulated in Ministerial Guidance. In essence, it derives the capabilities required to undertake NATO missions, translated into forces, logistics, C2, resources and armaments capabilities that the SCs would like to have to execute their mission. The DRR takes into account political and military guidance and is guided by the agreed Threat Assessment from MC161 which specifies the predicted security environment. Minimum Capability Requirements are quantified on the basis of an analysis of the accepted representative Planning Situations.

05 DRR Process

- *NATO Strategic Concept*
- *Ministerial Guidance*
- *DPC/DRC Assessments*
- *PCC*

- *SCs Missions*
- *MCM 161/04*
- *MCM 083/04*
- *MCM 039/04*

- *MC 400/2*
- *MC 317 /1 (NFS)*
- *MC 477*
- *...*

- *MC 161/166/165 Series*
- *AFID*
- *Open Sources*

Political Guidance & Tasking

SCs Mission & Military Guidance

Security Environment Assessment

DRR (Military/Scientists)

Minimum Military Requirement Only Constrained by NATO Level of Ambition & Security Environment

SCs Future Defence Requirements

Force Proposals & Force Goals to Nations

Recommendations for Capability Packages

Constrained by Burden Sharing, Reasonable Challenge, Available Resources, National Plans / Procurement, etc.

Figure 1.1 The 05 DRR Process

The results of the DRR forms the prime input to the NATO Biennial Force Planning process and the generation of Force Proposals for each NATO nation. These Proposals are then discussed with the Nations concerned and an agreed list of Force Goals for each Nation is established – this is a commitment by the Nation to Deliver Capability. They will also form an input to the development of Capability Packages and be linked to other defence planning organizations outside ACT.

The main purpose of the DRR is thus to provide a sound military rationale for the SCs' required capabilities in order to provide a solid negotiating basis for the agreement of Force Goals and an input to other defence planning development.

At the Istanbul Summit, the Heads of State and Government of the NATO member nations, agreed on a revision of the C-M(97)35: NATO's DEFENCE PLANNING PROCEDURES. This document defines the NATO Defence Planning Process by describing the main elements of this process and appointing the Defence Requirements Review (DRR) as being the formal tool for the generation of NATO's Minimum Military Requirements.
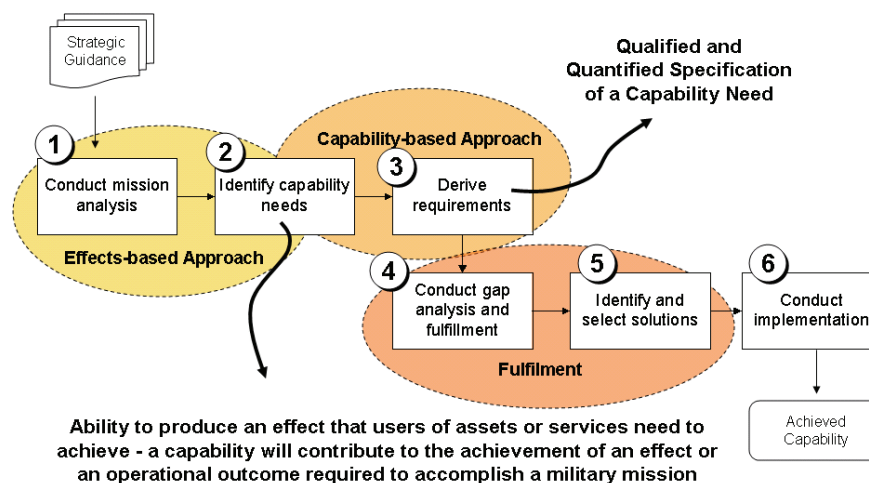
Figure 1.2 NATO's Defence Planning Procedures

C-M(97)35 describes the DRR as "a sophisticated operational analysis tool, to which military judgement is applied throughout, but particularly at the end in the interpretation of the results. The DRR can support different planning disciplines and uses an almost entirely joint capability-based approach, with a small amount of threat-based planning to validate the results." The DRR is intended to generate generic minimum military requirements. This part of the process is described in boxes 1-3 of Figure 1.2. These generic requirements, however, have to be translated into specific requirements in order to be appointed to the member nations. This step in the Process is represented by box 4 : Gap Analysis and Fulfilment. The DRR identifies various solutions for fulfilment, but steps 5 and 6 in the Capability Development Process as shown here, are primarily focussing on the capability needs that could NOT be appointed to the member nations. They take place outside the scope of the DRR.

1.2.2   The Long Term Requirements Study

The "Long Term Requirements Study" (LTRS) project is an ambitious analytical approach to the expression of future (more long-term) capability requirements. The name has been changed from "DRR-Future" to avoid confusion between the two studies, but they will be mutually supporting. The LTRS is to be based on the work already being conducted in the established, mid-term Defence Requirements Review and is expected to extend it into the future (15 years and beyond) timeframe. With major military systems requiring 10+ years to develop, and then remaining in service for 25+ years, it is necessary, however difficult it may be, to look at what military capabilities NATO might need in 10 to 25 years.

With visibility into the LTRS and its products, and the DRR and the FP/FG process extending to 10 years, nations should be able to make long-range decisions about capability development and procurement. It will do so by using "realistically generic" planning situations. These will be based on analyses of possible future strategic worlds, anticipated technological developments,

planning situations, effects based approach to operations. In general terms this process is depicted in Figure 1.3
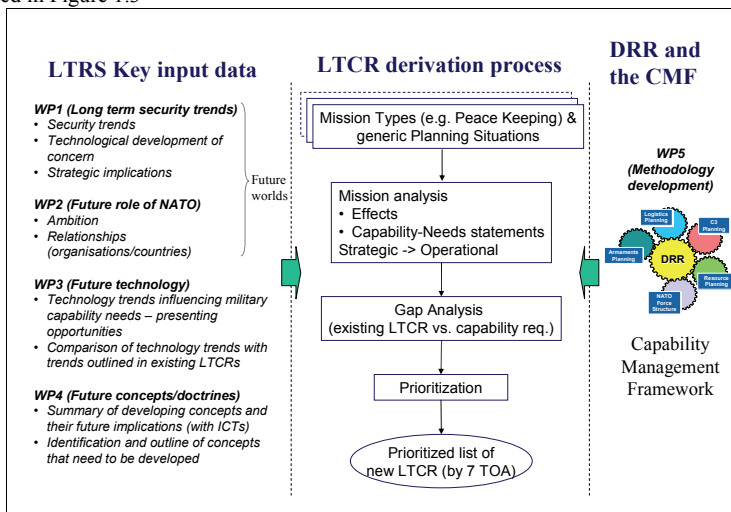
Figure 1.3: LTRS and DRR

Part of the output of the LTRS will be a new, fully supported list of Long Term Capability Requirements. Other non-R&T related requirements may also be identified. NATO hopes and anticipates that the LTRS will provide it with a product with which it will be able to discuss R&T priorities and activities with the nations.

1.2.3   Link between the DRR and the LTRS

As part of the evolutionarily new NATO approach to defence planning, the DRR and now the LTRS are recurring studies which will be mutually supporting. Although not all specifics have been worked out, the capability needs identified in the LTRS and the solutions developed through R&T and Armaments processes are intended to be incorporated into the DRR. Decisions will need to be made about which capabilities are best fulfilled at the national level and which at Alliance level through the NSIP.

The frequency and sequencing of the two parallel process is illustrated in the following figure.
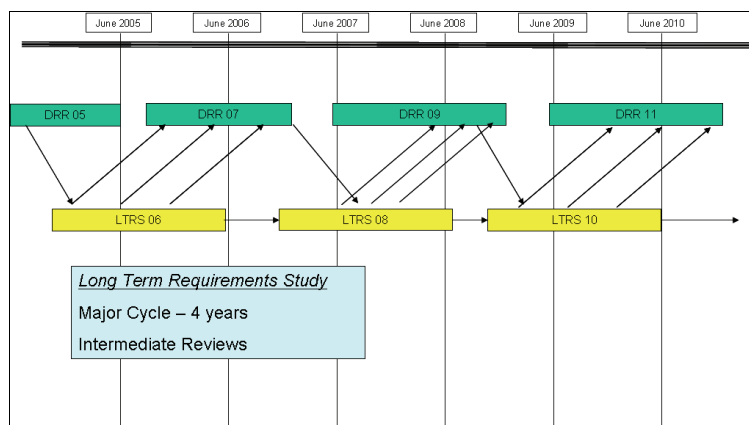
Figure 1.4: Frequency/Sequencing of LTRS/DRR

1.2.4   Place of This Study in the DRR/LTRS Process

One of the tasks of the NATO Consultation, Command and Control Agency (NC3A) is to support the NATO Strategic Commanders in the identification of medium-term capability requirements. Allied Command Transformation (ACT) has requested NC3A support for the analysis of the Alliance "Long Term Capability Requirements (LTCRs)". NC3A, in turn, has asked the Clingendael Centre for Strategic Studies (CCSS) for analytical support in work packages 1 and 2 of the LTRS (see the highlighted top left two work packages in Figure 1.5). The intended use of the study is as a 'scene setter' for the subsequent derivation of capability requirements. It is in these 'future worlds' that ACT will then develop 'realistically generic' planning situations that can be used for the LTCR derivation process through mission-to-task analysis. In this sense this study represents a contribution to the way in which the Alliance is adjusting its force planning procedures to the new more turbulent security environment.
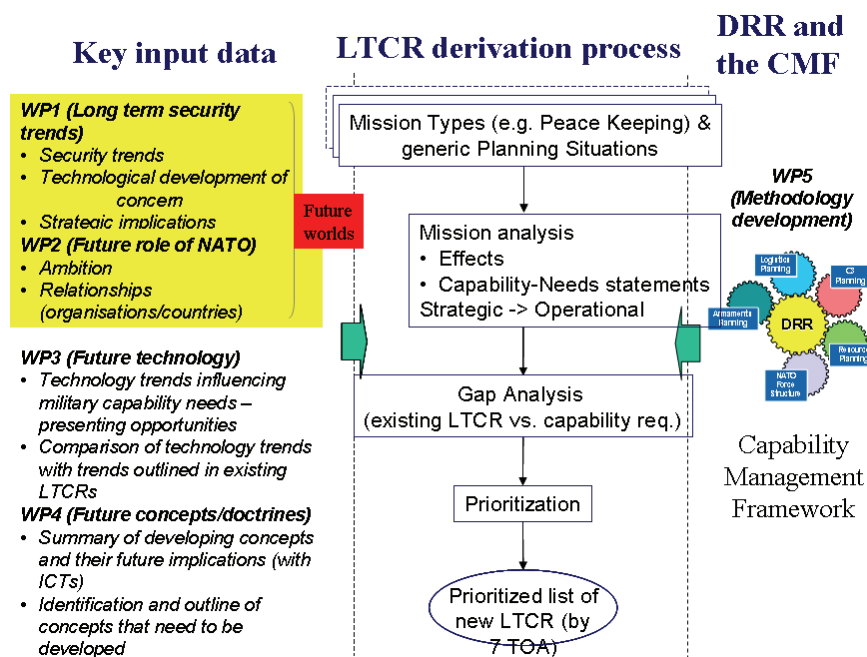
Figure 1.5: How does this project fits in?

1.3   CCSS approach to this project

Given the task at hand – the development of a set of 'Future Worlds', each one consisting of a combination of a future NATO and a future security environment – Figure 1.6 illustrates how the CCSS project team broke down this task into a number of distinct subtasks. These subtasks also form the backbone of this report.
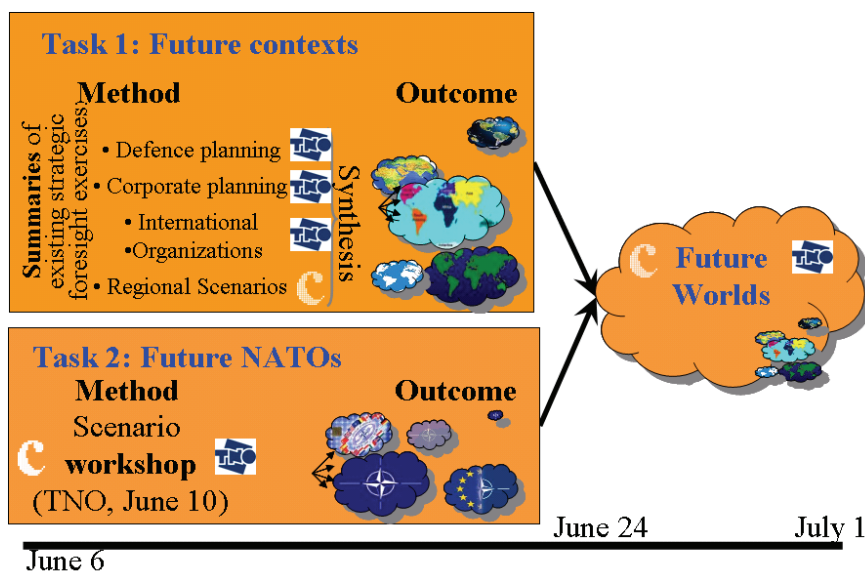
Figure 1.6: CCSS' approach to the study

The **first task** consisted of developing future security environments for NATO – images of what the security environment could look like by the year 2025. In order to do so, we decided to draw upon the (rich) insights of a number of existing strategic foresight exercises (and best practices).The CCSS team analyzed a number of 'mature' strategic foresight exercises. In order to gain insights not only from the military foresight exercises but also from a variety of other different perspectives we looked at work done within the Defence, Corporate and Academic sectors (see work package 1 in Figure 1.6). We also had a separate effort looking at some useful regional scenarios. In each setting (and for each major exercise), the team summarized both the *process* (including methods and tools) used for this exercise; the key *drivers* that were identified; and (wherever available) the actual *scenarios* that were generated. This first task was thus broken down in four different sub-tasks:

Sub-task 1A: looked at strategic foresight exercises for long-term defence planning. We included only countries that engaged in deliberate and systematic explorations of alternative futures for defence planning purposes. In order to get views from different perspective countries be selected from both within NATO (France, Germany, United Kingdom, United States) and a number of countries outside of NATO;

Sub-task 1B: looked at strategic foresight exercises in the corporate sector. We looked at the best well-known exercises in the public domain, such as the Royal Dutch/Shell global scenarios, the Global Business Network, some defense industry firms, etc.;

Sub-task 1C: summarized the main relevant insights from the academic literature in 'Futures Studies' and from some of the world's leading think tanks, including those in international organizations (e.g. Forward Studies Unit at the European Commission; OECD; IFIs);

Sub-task 1D: provided a synthesis of sub-tasks 1A – 1C and summarized alternative future security environments, with a special focus on the world's key regions (Europe, Africa, East Asia, South Asia, Latin America, Middle East, 'Eurasia').

The ***second task*** saw the CCSS project team construct a number of alternative futures of NATO as an organization by identifying the main aspects of NATO that are subject to change and the main drivers (internal and external) that are likely to impact those aspects. The first step of this task was to survey the existing literature on the future of NATO. Given the absence of serious studies on alternative future NATOs, our second step was to use some form of the Delphi-method[1] to identify the main drivers (both internal and external) that are likely to affect the future of NATO as an organization. For that we used a scenario workshop that took place at TNO-DV on June 10, 2005 and is described in more detail in Chapter 3.2. In the final step of this task we worked out the narratives behind those illustrative scenarios.

The ***third task*** of the project team was to merge the outcomes of tasks 1 and 2 into alternative *Future Worlds* which combine a possible strategic environment with a possible NATO structure. In this step the CCSS team also developed an approach to select four Future Worlds that cover a representative sample of the entire scenario space, thus reducing the set of Future Worlds to be considered for further development. This task was accomplished in two sub-tasks:

Sub-task 3A: this task combined the strategic context from Task 1 with a possible NATO structure. This is done in a matrix form to 'weed out' implausible combinations. This process was done in two independent groups of experts to achieve maximal objectivity. The outcome of the two sessions was merged in to one matrix and substantiated the choices made;

Sub-task 3B: a methodology was developed to select a limited number of worlds presented in the matrix from Sub-task 3A. Before applying the methodology it was be presented to the NC3A LTRS Team for approval. We then used the methodology to select four Future Worlds for further analysis in Task 4.

The methodology used in all these tasks is described in more detail in Chapters 2, 3 and 4, but we provide a brief synopsis in the following section of the report.
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[1] The Delphi –method is a qualitative forecasting method developed to support technology forecast and defence planning. In the usual application of this technique the members of a panel of experts (physically separated and unknown to each other are asked to respond to a series of questionnaires. These answers are tabulated and used to prepare a second questionnaire that contains information and opinions of the whole group. Each respondent is asked to reconsider and possibly revise his of her previous response in the light of the group information that has been provided. This basic process continues until the coordinator feels that some degree of consensus has been reached. TNO has used the method in different projects using electronic tools (Group Systems) to support the process.

1.4   Methodology synopsis

The CCSS project team took the utmost care in being transparent about methodology and in documenting every step of the process. The detailed description of the methodologies used for generating Future Security Environments, Future NATOs and Future Worlds development will be explained in more detail in the subsequent chapters, but we here provide a brief synopsis..

1.4.1   Future Security Environments

For the **Future Environments**, we opted to make use of the (quantitatively and qualitatively rich) body of literature in this field. We therefore engaged in an analytical inventarisation exercise, where we tried to 'map' and systematize some 30+ existing 'mature' strategic foresight exercises. We purposefully decided not to limit ourselves to scenario exercises in the defense context, but we included a number of scenario-exercises from both the corporate and academic worlds, as well from other international organizations. We developed a number of alternative approaches to distilling a manageable number of new scenarios from these existing exercises, and finally opted for one of those – after consultation with the NC3A project team members.

1.4.2   Future NATOs

For **Future NATOs**, there was no similar body of literature that could be drawn upon. We therefore designed and executed a scenario workshop, the details of which will be described in Chapter 3. We developed 5 distinct scenarios for what NATO might look like in 2025, that we feel represent enough plausible uncertainty to be useful for defense planning purposes.
[By using two different methodologies for these two work packages, we were also able to gauge the respective advantages and disadvantages of both approaches for future iterations of this process].

1.4.3   Future Worlds

The final step was then to merge Future Security Environments and Future NATOs into a set of '**Future Worlds**'. For this purpose, we made a matrix with on one axis Future NATOs and on the other axis Future Security Environments. We examined the cells to eliminate implausible combinations, and retained a small number of 'Future Worlds' which represent the main deliverable of this project.

1.5   Readers guide

The body of this report breaks down in two main parts: a more a more analytical part, and a more narrative one. Chapters 2, 3, 4 and 5 describe in a more analytical fashion the entire process through which Future NATOs, Future Security Environments and finally Future Worlds were developed. Chapter 6 of this report presents the final result of the study – four alternative *Future Worlds* – in a more narrative form. The report ends by presenting some conclusions and recommendations in Chapter 7.
Appendix 1 presents the more detailed descriptions of the scenario exercises that were scanned for this project; and Appendix 2 has biographical sketches of the main contributors to the report

2.   Future Security Environments

2.1   Introduction

In this chapter we start out by defining some of the main definitions that are used throughout the analytical part of this report. We then go on to document the methodology that was used to generate future security environments and to present the results.

2.2   Definitions

To facilitate the reading of the report we submit the following definitions for some of the key concepts that are used throughout this report:

- **'scenario exercise'** - interactive exercise that employ a deliberate methodology to generate a number of scenarios for different purposes. For example, 'Strategic Trends' was an 18-month effort by the UK the Joint Doctrine and Concept Centre (JDCC), an integral part of the UK Ministry of Defence, to develop a coherent view of how the world might develop over the next thirty years in ways that could alter the UK's security.
- **'driver'** – a key driving force that effects change in a system. For example, technological change is seen in many scenario exercises as a key 'driver'.
- **'driver metric'** – a standard of measurement of a driver – the way in which this driver can be operationalized in a quantitative way, allowing for comparisons between exercises. In this project, we have used only basic ordinal[2] scales with two extreme values (1 and 3) and one intermediate (2). In the case of technological change, for instance, the team just used a scale from low to high technological change, with an intermediate rank as well. [Ideally we would have liked to use interval-level scales[3]. The project team also felt this would have been possible, but it would have required a significant additional amount of time and energy – which was not available due to the project's tight deadlines.]
- **'driver value'** – a numerical quantity (in our case from 1 to 3) attributed to a particular driver in a particular scenario. Many scenarios, for instance, had driver value '3' (high technological change) for the specific driver 'technological chance'.
- **'driver bandwidth'**- the bandwidth of driver values that are observed within a (or multiple) scenario-exercise(s). Given the crude ordinal nature of our scales, in most instances the bandwidth was equivalent to the metric itself. But in case one particular driver value would be missing from the metric in a particular scenario (e.g. if only values '1' and '2' would be observed) – this would allow for some reduction of uncertainty.
- **'(point) scenario'** – the usual form of a scenario, which combines a number of single driver values into one possible 'future situation'.
- **'scenario space'** – a multi-dimensional model of all possible or plausible future situations, in which not 'point values', but 'bandwidths' of driver values are combined.

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[2] Meaning that the intervals between adjacent scale values are indeterminate.

[3] Whereby adjacent scale values are equidistant with respect to the attribute being measured.

2.3   Uncertainty and Scenario Exercises

Uncertainty itself has become one of the only certainties in strategic planning. The permanent and high pace of change in markets and technologies has forced planners in the business world to profoundly rethink their approaches to 'strategic planning'[4]. Policy makers all over the world are confronted with similar deep uncertainty in fields ranging from environmental issues (such as global warming) to medical ones (the avian flu). Finally, the defence planning communities have been first pleasantly (the End of the Cold War) and then brutally (the advent of global terrorism) shocked into reviewing their own approaches to dealing with uncertainty[5].
In all of these settings, 'scenarios' – alternative visions of the future – have become an important tool in adjusting the strategic planning process to the new deep uncertainty. Developed and refined during the 1970s and 1980s in primarily the petro-chemical sector, the main purpose of this approach to planning is to better enable organizations to anticipate possible futures and imagine alternate strategic responses to these futures. They continue to be widely used in a number of different sectors.

2.4   Systematizing insights of existing strategic foresight exercises

For this part of the report, the project team strongly felt that it would be essential to try to draw as much as possible upon the large body of strategic foresight excerises that have been carried out in recent years in a variety of different settings. Yet scenario exercises of this nature to this date have rarely tried to build on existing efforts by others[6]. To some extent, this is understandable, as frequently the very process of developing scenarios is thought to be almost as important as the scenarios themselves. For the purposes of this study, however, we felt it was essential to try to build on the existing efforts in this field[7]. The team also was of the opinion that in the past decade enough critical mass has been reached in this field to make this an attractive possibility. The amount of time and energy that has been invested in these exercises can never be replicated within the confines of one study, let alone a study of this nature. One might therefore not implausibly presume that the insights to emerge from these exercises bear some relationship to the efforts invested in them. As a result, rather than merely starting yet another 'independent' scenario exercise, the method that was chosen by CCSS for this working package consisted in first instance of an attempt to systematize the insights that have emerged from some major strategic foresight exercises. The intention of the project team was to use this information in the development of our own alternative 'future security environments' for

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[4] See e.g. Mintzberg, H. (1994, January-February). The fall and rise of strategic planning. Harvard Business Review, 107-114.

[5] Davis, P. Davis, PK, ed. (1995). New Challenges for Defense Planning: Rethinking How Much is Enough, RAND Corporation. See also Robert J. Lempert, Steven Popper, and Steven C. Bankes (2003), Shaping the Next One Hundred Years: New Methods for Quantitative, Long-Term Policy Analysis Rand Corporation, MR-1626-CR.

[6] In our sample, the JDCC forms an exception to this, although also in that case the link between the described other exercises and the JDCC exercise itself appears to be quite tenuous.

[7] After having done this exercise, the team feels that a similar exercise trying to systematize the insights in existing classified scenario exercises for defence planning purposes might be an elegant alternative to repeated large new scenario exercises.

NATO. It has to be pointed out that in the dissection of these existing exercises, we did not exclusively look at the 'security' dimension of the exercises, but we tried to capture as much of their insights and dynamics across different subject domains as possible. This is also clearly in line with the growing trend towards recent 'holistic' approaches in defence and security planning, in which also other dimensions of state power (and not only the military one) are taken into consideration (see the trend towards effect-based planning in a number of NATO countries; and the (very recent) US focus on 'unified action').
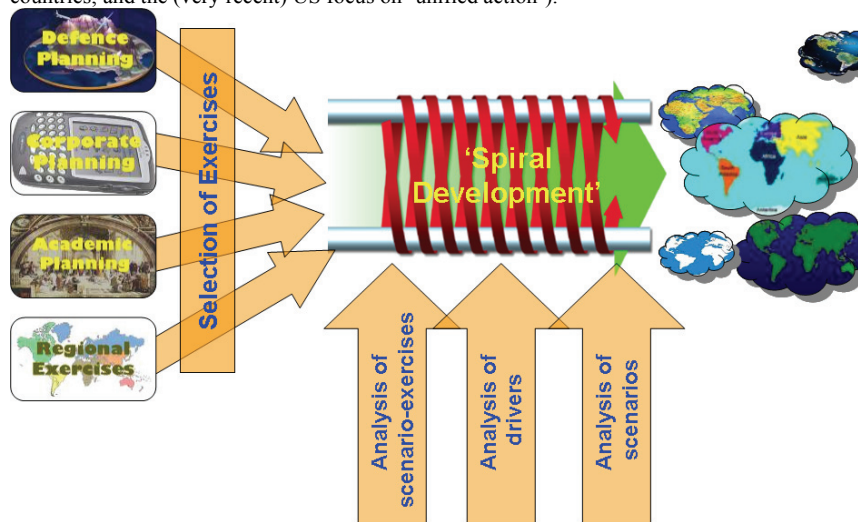
Figure 2.1: The CCSS Approach to Developing Future Security Environments

2.4.1   Selection of exercises

The exercises were deliberately selected from a number of different settings to avoid potential biases that might occur in strictly defense planning-related exercises. Our main intention in selecting exercises was NOT to be exhaustive, but rather to select a fairly representative sample of exercises from these different settings. The exercises had to fulfill the following criteria:

- They had to represent '*mature*' exercises that had gone through some interactive iterative process to come up with the final scenarios;
- They had to entail some *significant effort*, and not be the result a one-off meeting for instance;
- The exercises had to be based on some *conscious methodology*;
- They had to be both *substantively* and *geographically diverse* – we took exercises from 3 different planning contexts (defence; corporate;' academic'); and also not only from within NATO[8];
- Their *time horizon* had to be medium-term (between 10 and 30 years from today);

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[8] An effort was made to examine similar exercises in countries such as The People's republic of China, Japan and Russia – but (possibly because of time limitations), these efforts remained without success).

- The exercises (and the outcomes) had to be in the public domain. This unfortunately excluded some major efforts in a number of countries, such as the French 'Plan Prospectif à 30 ans', the scenarios of which have not been made public[9].
- Finally, the exercises had to have some utility for defence planning (in the broadest sense).

As a result, the project team selected some 30 scenario exercises that were felt to correspond to those criteria.

Organization	Title	
Air University, Maxwell AFB	AIRFORCE 2025	A
Australian Defense Force	Defence White Paper(s)	A
Boeing	Frontiers 2025	B
Business Council of Australia	Aspire Australia 2025 - I	B
Business Council of Australia	Aspire Australia 2025 - II	B
California Institute of Technology	Which World?	W
Canadian Defence Forces	A Strategy for 2020	C
Challenge! Forum	Geopolitics – The Next Wave	G
Challenge! Forum	Scenarios for 2025	C
Center for Strategic and International Studies	Seven Futures Project	C
European Commission	Scenarios Europe 2010	E
French MoD	Plan Prospectif-30	P
Global Scenario Group	Branch Points: Global Scenarios and Human Choice	G
Global Business Network	Abrupt Climate Change Scenario and its Implications for United States National Security	C
Global Business Network	Middle East	M
Institute of Nuclear Materials Management	Post 9/11 Scenarios	I
Northrop Grumman	Defining the Future of National Security: A Planner's Guide	G
OECD	Alternative Futures 2000-2025	C
Outsights	Scenarios for the Poorest: the View from 2030	C
Planning Commission, Government of India	Toward a Consensus View of the Security Environment, 2001-2025.	I
Rabobank	Viewing Futures' Scenario planning	R
S. Tangredi	Toward a Consensus View of the Security Environment, 2001-2025.	M
Shell	Global Scenarios	S
Shell International	Energy needs. Scenarios to 2050	E
South Africa, Department of Science and Technology	Foresight Crime Prevention, Criminal Justice and Defence Report	S
UK MoD	White Papers	U
UK MoD Joint Doctrine and Concept Centre	Strategic Trends	J
United Nations University	Millennium Project	U
UNAIDS	AIDS in Africa	U
US National Intelligence Council	Mapping the Global Future 2020	N

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[9] France has made a commitment to do this in the next iteration of the PP30.

World Business Council for Sustainable Development	Exploring Sustainable Development	W

Figure 2.2: Overview of relevant exercises (1)

2.4.2   Processing of exercises

All these exercises provide informed alternative views of what the world might look like in the medium-term future. But all of them use different methodologies to arrive at different types of scenarios. In order to present the insights from them in a systematic way, they had to be processed before they could usefully be compared to each other. The main task in this work package was therefore to systematize the findings of those various exercises – essentially to sketch an image of the 'state of the future' as it emerges out of these various scenario exercises.
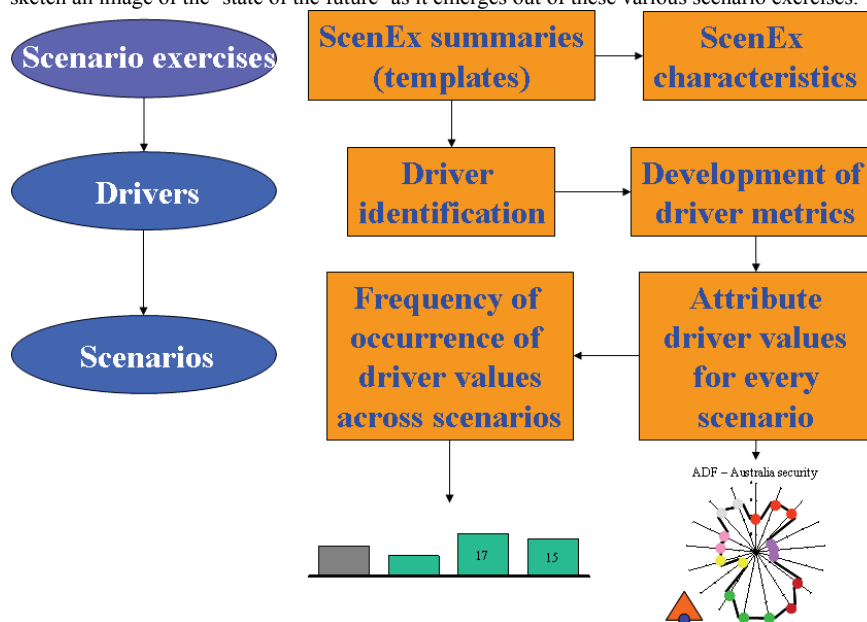
Figure 2.3: Method used for the processing of scenario exercises

Figure 2.3 illustrates the process that was used in order to achieve this result. After collecting and writing succinct summaries of the selected exercises, the project team started regurgitating them in a number of different ways – with an eye towards making optimal use of their riches for the purposes of the this project. The next sections of this report document the various steps that were made as well as the results they generated. Although these steps are presented in this report in a sequential way, the process was more of an iterative, 'spiral' one (see also Figure 2.1: The CCSS Approach to Developing Future Security Environments on p. 25), in which the results from one step frequently prompted us to tweak some of the previous steps and then reiterate the process.

2.4.2.1   Summaries of scenario exercises

The first step was to make a 3-4 page summary of each scenario exercise on the basis of a standard template that included the following elements:

- **Primary characteristics**
  - General information
    - Organization / country of origin – which organization, in which country, was responsible for this exercises
    - Year of publication – what year was the exercise published (it was not always possible to establish when the actual exercise took place)
    - Background – what the precise purpose of the exercise was
    - Available at (typically internet site) – where the exercises can be found
  - Scope
  - Time horizon – what the time horizon was for this exercise;
  - Focus of interest – whether the exercise was more focused on issues of governance and conflict, economy, environmental change or other topics;
- **Substantive content**
  - Drivers of change – which are the main drivers that are discussed in the exercise, either explicitly or implicitly
  - Key uncertainties / certainties described in the exercise (in case these were used)
- **Summary of scenario(s)** – brief descriptions of the various scenarios that were generated in the scenario exercise;
- **Methodology used –** succinct description of the methodology that was used in the in the scenario exercise (these methods were then subsequently systematized.in the way described in the following step).

The summaries of the scenario exercises can be found in Appendix 1 of this report.

2.4.2.2   Scenario exercise characteristics

The second step undertaken after describing the various scenario exercises was to systematically compare their main characteristics on the basis of a fairly crude, but ordinal, scale from 1 to 3 – based on the judgment of the scenario team. The following charcateristics were taken into consideration

- **Basic characteristics:**
  - ➔ Whether the scenario exercise was formal or informal;
  - ➔ Whether it was parallel (through the commissioning of parallel papers from different authors for instance) or interactive (through the use use of expert groups);
  - ➔ Whether the link between drivers and scenarios was weak or explicit and strong
  - ➔ Whether the exercise was more based on drivers (general forces) or trends (extrapolations from the present); and
  - ➔ Whether the methodology used was transparent (i.e. explicitly described and documented) or non-transparent
- **Nature of exercise**
  - ➔ How useful the exercise was for defense planning: somewhat or very;
  - ➔ Whether the exercise was entirely open or contained a number of pre-'planned' (pre-structured) elements;
  - ➔ Whether the scenarios were intended to be an output or an input into a braoder exercise;

➔ Whether the exercise was more normative (what should the world look like) or explorative (what could it look like); and
➔ Whether it was more a 'backcasting' type of exercise (working back from the future to today) of a 'forecasting' one (projecting from today in the future)

- **Scope**
  ➔ Whether the exercise had more of a regional or a global focus.

The following table summarizes the scores that were given by the project team to the various scenario exercises.

	Informal (1) Formal (3)	Parallel (1) Interactive (3)	link drivers-scenarios (1 =weak; 3= drivers (1) of trends (3)	pre-structured (1) or open (3)	output (1) or input (3)	regional (1) or global (3)	normative (1) or exploratory (3)	backcasting (1) or forecasting (3)	method non-transparent (1) or transparent (3)	Utility for Defence-planning (1 = weak, 3 = strong)
ADF	1	-	1	2	1	3	1	3	1	1	3
Airforce	3	3	3	1	3	1	3	3	1	2	3
BCAFIN	2	3	2	1	2	1	1	3	2	3	2
BCAPREP	3	3	3	2	3	1	1	3	3	3	3
Boeing	1	2	1	1	1	1	2	1	2	1	2
Canada	3	3	3	3	3	3	1	1	3	3	3
CF 2025	2	2	3	1	2	2	3	3	2	1	3
Climate change	1	1	3	2	1	1	3	3	3	2	2
CSIS	1		3	1		1	3	1		1	2
Energy	3 ?		3	1	3	3	3	3	2	1	1
EU Comm	3	3	3	2	3	1	3	3	2	3	2
Geopolitics	2	3	2	3	2	2	3	3	3	1	2
Grumman	3	2	3	1	3	1	1	3	3	3	2
GSC	3	1	3	2	1	1	3	3		3	2
India	1	1	1	1	2	1	1	1	3	1	2

Figure 2.4: Scenario exercise analysis (1)

	Informal (1) Formal (3)	Parallel (1) Interactive (3)	link drivers-scenarios (1 =weak; 3= drivers (1) of trends (3)	pre-structured (1) or open (3)	output (1) or input (3)	regional (1) or global (3)	normative (1) or exploratory (3)	backcasting (1) or forecasting (3)	method non-transparent (1) or transparent (3)	Utility for Defence-planning (1 = weak, 3 = strong)
INMM	2	2	2	2	2	2	3	3	3	1	3
JDCC	3	3	3	3	2	2	3	3	3	3	3
McNair	3	1	1	2		1	3	3		3	3
Middle East	1	1	2	3	2	2	1	3	1	1	3
NIC	3	3	3	1	3	1	3	3	3	2	3
OECD	1	1	2	2	1	2	3	2	3	1	1
Outsights	3	3	2	1	3	2	3	2		2	1
Rabo	3	3	3	1	3	3	1	3	2	3	1
S Africa	2	2	1	3	3	3	1	3	3	1	1
Shell	3 ?		3	2	2	1	3	3	2	1	2
UK	2	3	2	2	2	1	2	2	2	3	2
UN	3	3	2	2	2	1	3	3	1	3	2
UNAIDS	3	3	3	1	3	1	1	3		3	2
WW	2	2	2	2		1	3	3		1	2
WWCSD	3	3	2	2	3	3	3	3	3	2	1

Figure 2.5: Scenario exercise analysis (2)

To visualize these differences, we used the following radar charts, in which each scenario exercise characteristic has its own value axis radiating from the centre point. The first radar

chart presented here can be used as a legend to read the individual radar charts for each scenario exercise analysed by the project team. These radar charts can also be found back in Appendix 1.
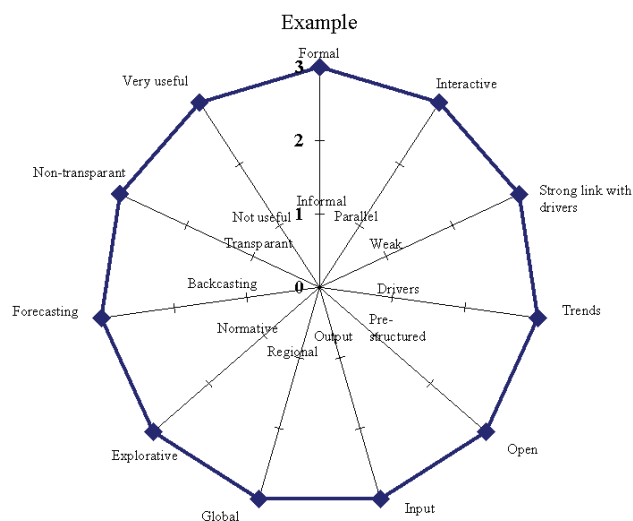
Figure 2.6: Comparative characteristics of the scenario exercises – a notional radar chart
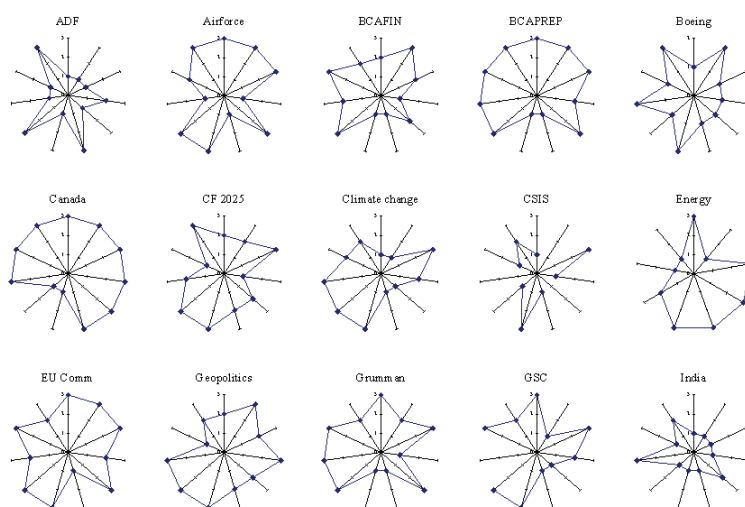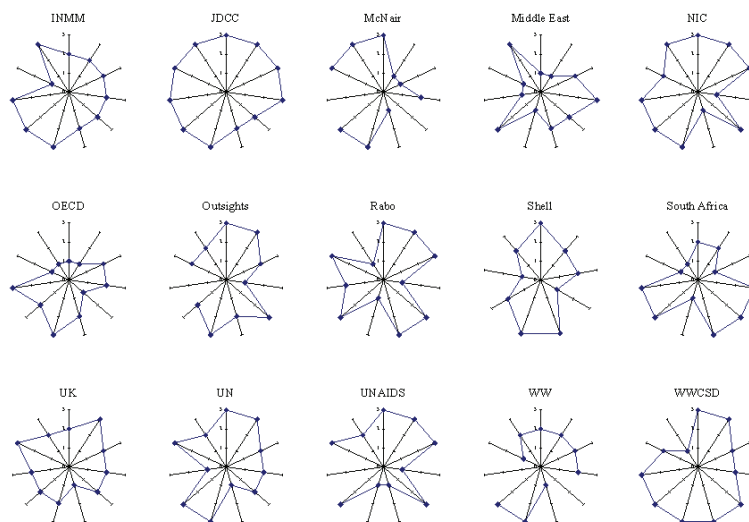
Figure 2.7: Comparative characteristics of the scenario exercises – actual radar charts

It may be worthwhile to point out that the radar charts in Figure 2.7 could theoretically be used for weighing the actual findings of the scenario exercises. We, for instance, scored the exercises in such a way that a 'full' radar graph represents an exercise that that we considered the most useful for our purposes. A brief glance at these charts thus immediately illustrates that the Canadian, JDCC, NIC and WWCSD represented exercises that we as a team judged particularly useful for our purposes. Yet we shied away from giving those exercises extra weight in our own analysis, as we thought that would unjustifiably reduce the 'richness' that we were looking for.

The following histograms (Figure 2.8) show the distribution of values across scenario exercises. This clearly indicates the diversity of our sample of scenario exercises, and reinforces the need for a systematization of the main insights behind them. It becomes clear, for instance that most exercises are formal and of a more explorative nature. But on most other characteristics, there is far more variability – suggesting that our sample did represent, even within the consciously restrictive selection that we made, was quite varied.
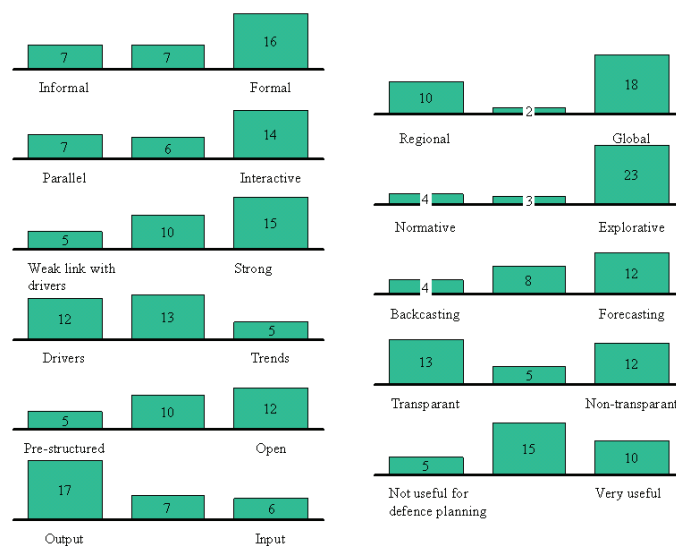
Figure 2.8: Comparative characteristics of the scenario exercises – histograms

2.4.2.3   Distilling and Grouping Drivers

In many ways, drivers are the most interesting aspect of most scenario exercises. In the final analysis, the scenarios that are generated in these exercises represent an often fairly arbitrary combination of driver values at the end of the time horizon of a given scenario exercise. Even for strategic planning purposes, it is often useful to look not just at the actual final scenarios that are generated in the exercise, but also at the insights that can be gleaned from it about the underlying drivers: which drivers are identified, which ones are felt to be the most salient ones, and what the likely bandwidth is of driver values in the timeframe that was chosen. In some sense, these insights provide a much richer (and arguably more useful – also for planning purposes) sense of the entire scenario space than the point scenarios that are ultimately selected from within that broader space. To try to capture these insights, the project team went through a number of steps to make drivers comparable across exercises.

We started with a spreadsheet with the scenario exercises in the column headers, and we filled the columns with the main drivers that were used in those exercises. Wherever the scenario methodology had a specific section explaining the drivers that had been employed, we used those; but even in those cases where the drivers were not made explicit, we still attempted to distill the implicit drivers. This yielded the following spreadsheet.

The team then had a discussion about those drivers and attempted to group them in a number of broad 'primary' categories. With this concept we meant that in order to avoid double-counting as much as possible, we tried to only identify groups of drivers that captured distinct dimensions

of the scenario space. Certain aspects of this step proved fairly controversial within the group – not so much the identification and clustering of the drivers, but deciding which group was 'primary' (in the sense that it could not be subsumed in other categories). Thus 'globalization' was a driver that came back in a number of exercises, but in the final analysis, the majority of the project team agreed that the analytical usefulness of this concept was limited, because it covered a number of trends in other categories (such as the economy, technology, and the distribution of power). This is the final list of key driver categories the team agreed upon:

➔ **Distribution of Power** (world power grid): how power would be distributed in the world by 2025

➔ **Dominant actors - Triangle: State - Market - Non state actors** (political): which actors would be the dominant ones: traditional states, markets or non-state actors

➔ **Attitudes & world views**

➔ **Regional Stability**

➔ **Technology**

➔ **Demographics**

➔ **Resources**

➔ **World Economy**

➔ **Global Governance**

In the next step, the team then colour-coded the various drivers, to provide a visual illustration of which driver categories seem to prevail in the various scenario exercises.
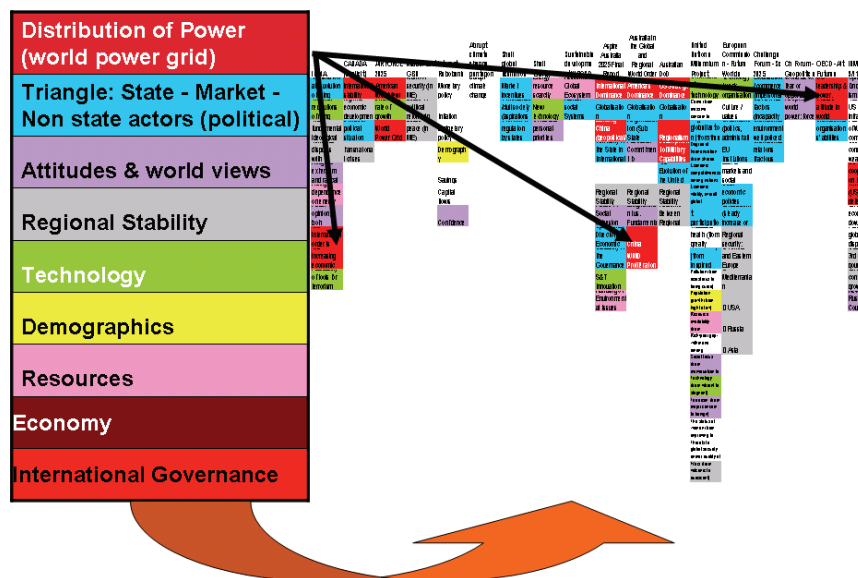
Figure 2.9: The grouping of the drivers

This graphic provides some idea of the main driver categories across exercises. But for the purposes of this exercise (to be able to present a commensurable view of the 'future' across

scenario exercises), the project team decided that we needed the additional step to operationalize these driver categories and the key drivers within them.

2.4.2.4   Driver metrics

The next step in the processing of the exercises was therefore to take a closer look at the driver categories. Based on the actual content of the sample of scenario exercises, every driver category was broken down in what the team felt were the key aspects of that category, and those were then operationalized and ranked on a scale from 1 to 3 in the following way:

Power	
Distribution power	unipolar ●——● multipolar
Location power	west ●——● east
Balance power	balanced ●——● unbalanced
Attitudes	
Paternalism	top-down ●——● bottom up
Fear - opportunity	fear ●——● opportunity
Inward - outward	altruism ●——● self-centredness
Regional stability	unstable ●——● stable
impact of regional instability	low ●——● high
Technology	
Technology availability	low ●——● high
Technology progress	low ●——● high
Technology effect	disruptive of international stability ●——● supportive of international stability
Demography	
Demography flows	low ●——● high
Demography stocks	decr ●——● incr
Resources	
Resources concentration	low ●——● high
Resources scarcity	low ●——● high
Legal Institutional	collapse international governance (1) ●——● effective international governance (3
Global Economic Situation	decline (1) ●——● growth (3)

Figure 2.10: Operationalization and coding of the drivers

1. *Power variables*
   - **Polarity**. Widely recognized in international relations theory as one of the key determinants of international stability. 1 stands for a clearly unipolar world; 3 for a clearly multipolar one – 2 for anything in between
   - **Location of power** – which geographical part of the world is dominant in world politics. Given the available values for this variable across the scenario exercises, we have ranked it from 1 (the 'West' – broadly speaking the OECD) to 3 (the East – primarily the upcoming Asian powers such as China and India).
   - **Distribution of power** – whether power is relatively evenly balanced (3) in the international system, or whether there are large power discrepancies (1). Note that this variable is distinct from polarity: both unipolar and multipolar worlds can both be characterized by either relatively balanced or relatively unbalanced power discrepancies. 1 stands for unbalanced power distributions; 3 for balanced ones.
2. *Attitudes*. These variables reflect perceptions of people/elites/decisionmakers in the 'West' of world that surrounds them.
   - **Paternalism** – whether the prevailing attitude in the West is one of 'steering' of world politics (top-down - 3), or more 'laissez-faire' (bottom-up - 1)
   - **Fear/Opportunity** – whether the world is viewed more in terms of 'fear' (as after 9/11 in the US - 1) or in terms of 'opportunity' (as for instance in the 90s of the previous century - 3)
   - **Inward/Outward** – whether countries/people have more of a defensive, inward-looking attitude towards the world (such as for instance during the

interbellum in the previous century – with protectionism rampant and 'beggar-thy neighbor'-policies -1) or a more 'offensive', outward-looking one (such as arguably today, when the 'Western' world is more pro-active throughout the world, both in military terms and in non-military ones – see EU-enlargement, development assistance, conditionality, etc. - 3)

3. *Regional Stability*
    - **Stability** – whether there are many regional conflicts (both inter- and intra-state in the developing world). 1 denotes high instability (such as today); 3 low instability (such as during the Cold War, for instance).
    - **Impact of regional instability on West** - whether these conflicts (are thought to) actually matter to the West (1) or not (3). In more 'closed' worlds, for instance, the West could develop into a 'fortress West', where it could (try to) keep the troubles in other parts of the world at bay.

4. *Technology* – we broke down the technological driver category in 3 drivers:
    - **Progress** – whether technological progress continues at its current high pace (3) or slows to a crawl (or even reverses - 1)
    - **Distribution** - whether technology is broadly available throughout the world (3) or restricted to the 'West' (1)
    - **Effect** – whether technological developments have a net supportive effect on international stability (3) or a net disruptive one (as in scenarios with high proliferation of various destabilizing weapons – e.g. weapons of mass destruction -1).

5. *Demography* – In terms of demography, we have looked at all scenarios from the point of view of world 'stocks' of population (how many people there are in the world) and flows (migration, refugees). We want to stress that the theoretical literature is clearly indeterminate with respect to the impact of these demographic variables on international stability
    - **Stocks** – overall world population levels – 1. High, 3 Low
    - **Flows** – volumes of population movements across borders – 1. Low, 3. High

6. *Resources*
    - **Concentration** – whether resource endowments in the world are distributed evenly (3) or not (1).
    - **Scarcity** – whether resources tend to be scarce (e.g. no realistic replacements for fossil fuels within the next 25 years; or new scarcities such as water) or not (e.g. technological breakthroughs mitigate resource scarcities).

7. *Legal/Institutional* - whether there exists a functional system of international governance (including legal norms - 3) or not (1)

8. *Economic situation* – whether the world economy is in good (3) or bad (1) shape

The overall logic behind the coding was that we – wherever possible – attempted to give higher scores for those driver values that were felt to be 'good' for the West. As already indicated, this is not always uncontroversial. For example - is a 'unipolar' or a 'multipolar''better' for the West; or are population flows 'good' or 'bad'? In these controversial cases, the team opted for the coding logic that seemed to represent the majority view in the relevant literatures (even if the project team did not always agree with those). A final comment is that in some scenarios, individual drivers were either absent or indeterminate. Whenever that was the case, the project team scored those as '0' or '4' respectively.

The final category – the ***dominant actor in the international system*** – could not be ranked on an ordinal scale, and was therefore given a categorical value in the following way:
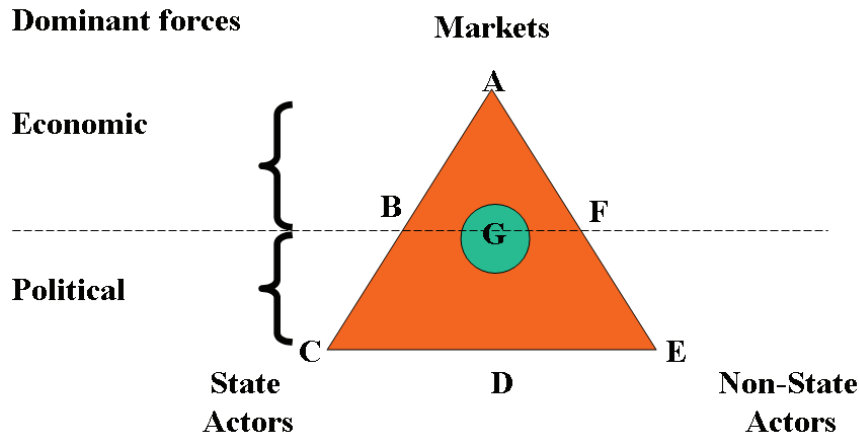
Figure 2.11: Operationalization and coding of the 'dominant forces'

For each scenario the team established which actor (or combination of actors) was the dominant one. In some scenarios, political actors seemed the most dominant ones (bottom half of the triangle) – those were differentiated between state actors (both nation states and coalitions of states (whether formal, in international organizations; or informal, in coalitions of the willing) and non-state actors (e.g. terrorist organizations; crime cartels). In other scenarios, events seemed to be more driven by market forces, which appeared more powerful than the political actors. This yielded the following possible 'ideal' values:

A. **Market forces** are dominant
B. A **combination of markets and state actors** (whereby sometimes the markets may appear slightly more powerful, sometimes states)
C. **State actors** are driving events
D. Political forces are dominant over economic ones, but **both state actors and non-state actors appear about equally powerful** (with maybe sometimes the former, sometimes the latter in ascendancy)
E. **Non-State actors** (e.g. terrorist organizations; crime cartels) become the main drivers of world politics
F. States lose their grip over world events, which are primarily driven by a **combination of powerful economic actors** (multi-national corporations) **and non-state actors** (e.g. terrorist organizations; crime cartels)
G. Power is distributed fairly evenly between the aforementioned groups, creating some form of '**balance of power**' between them (every group has its own preferences, but has to bargain strategically with others to obtain some of them).

In order to visualize all of this information, we made radar charts for every scenario in the following way:
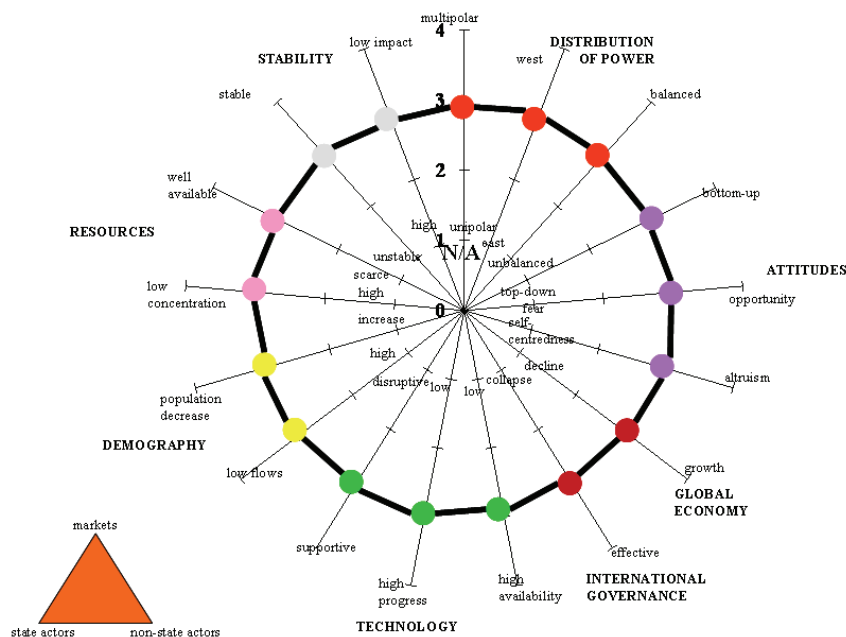
Figure 2.12: Driver values for scenarios – a notional radar chart

In these radar charts (which can also be found back in every scenario exercise description in Appendix 1), each driver has its own value axis radiating from the centre point. A coloured dot represents the value for that driver in that scenario, with the dots coloured on the basis of the above mentioned colour code for driver categories. Lines connect all the values in the same series, with the intuition behind it being that radar charts with lines that are closer to the centre represent scenarios that are unpleasant for NATO; whereas 'full' radar charts connote scenarios that are quite congenial to the 'West' (/NATO). The triangle with the value for the 'dominant actor' driver for every scenario was added to the left bottom of each radar chart. Please note that the values in thisradar chart are purely notional – this chart represent a 'medium-good' future on all value axes[10].

2.4.2.5   Occurrence of driver values across exercises

To get a better understanding of the assessments made in these various exercises about which driver values occur most frequently[11] – always with an eye towards 'mapping the future' – we calculated their values. The results are demonstrated in the following histograms.

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[10] For the purposes of the radar charts, value '4' (indeterminate) was given a '1', and values '1', '2' and '3' respectively are given the values '2', '3' and '4'. This way, the 'full' charts still represent the 'best' values.

[11] Note that these frequencies do not necessarily represent higher likelihood – they merely reflect that the various scenario exercises judged that those driver values were useful for the particular
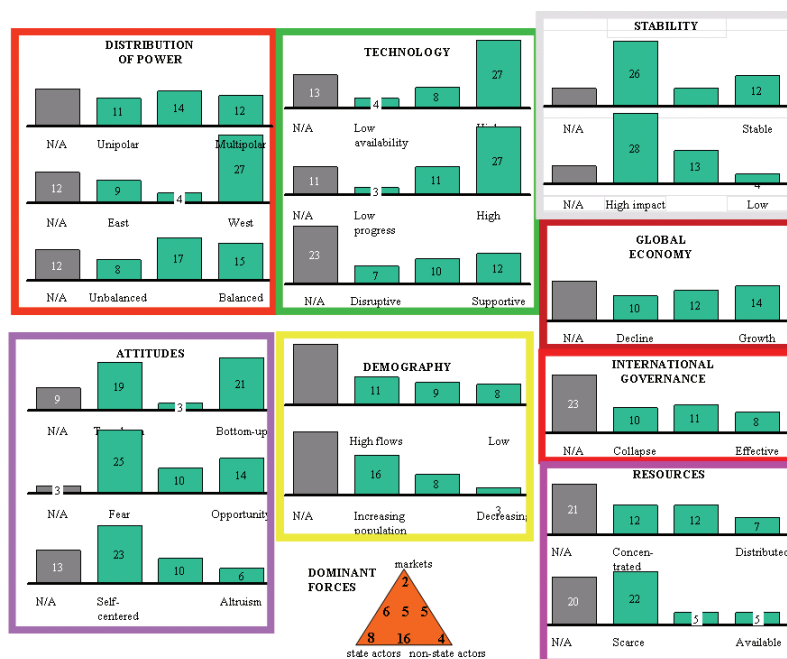
Figure 2.13: Driver values for all scenarios – frequency tables (histograms)

2.4.2.6   Mapping the Scenarios

The following graphs illustrate the world's future as it emerges from the scenario exercises that were analyzed in this project. They can be read in a number of different ways:

- By looking at how 'different' the charts are, the reader can establish how high the variability is across the sample
- By looking at how 'full' most radar charts are, the reader can visually ascertain whether the futures tend to be rosier or gloomier;
- A reader who is interested in one particular driver category can zoom in on that (colour-coded) part of the radar chart. Those interested in 'power' variables, for instance, can just look at the values for the red dots in the top right hand quadrant of the radar charts.

purposes of the exercise. Nevertheless, our project team also hoped to be able to use this information in the selection of our own 'future security environments'.
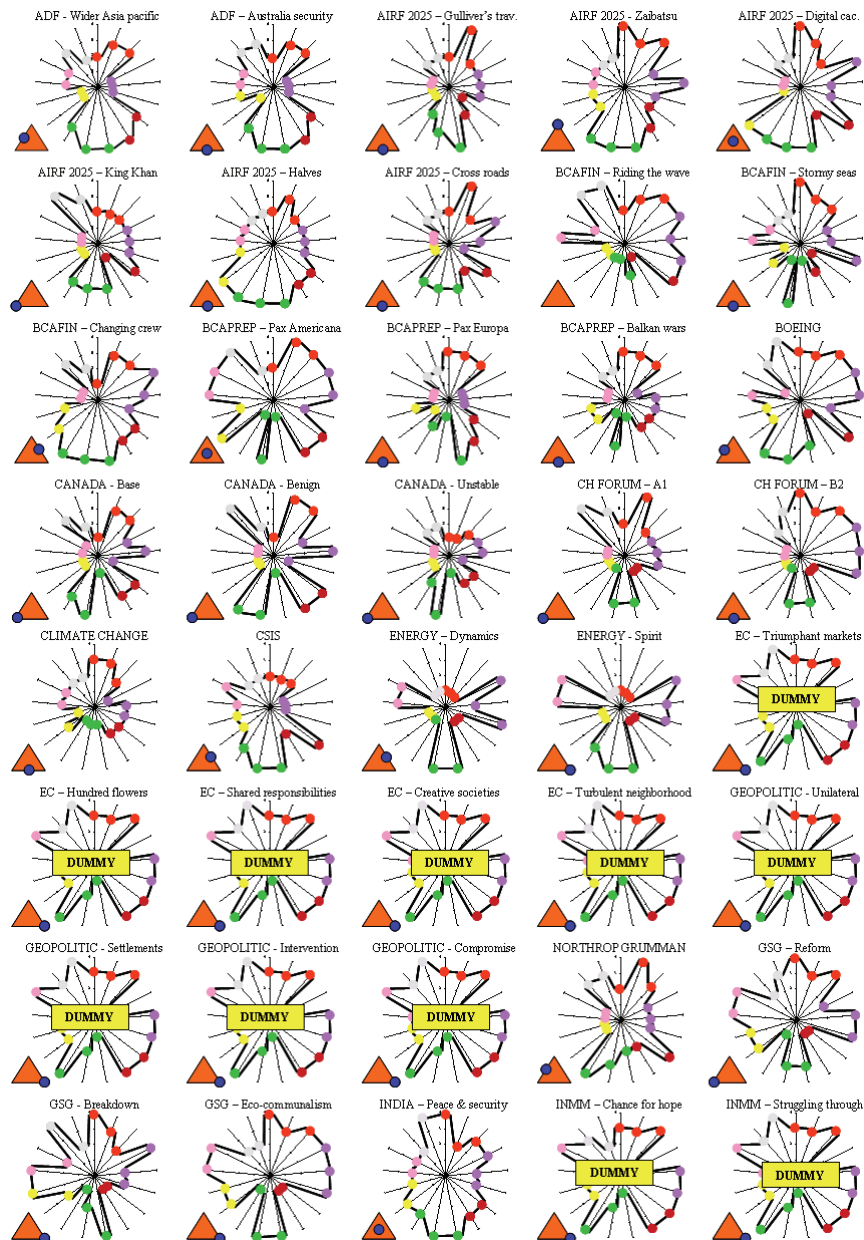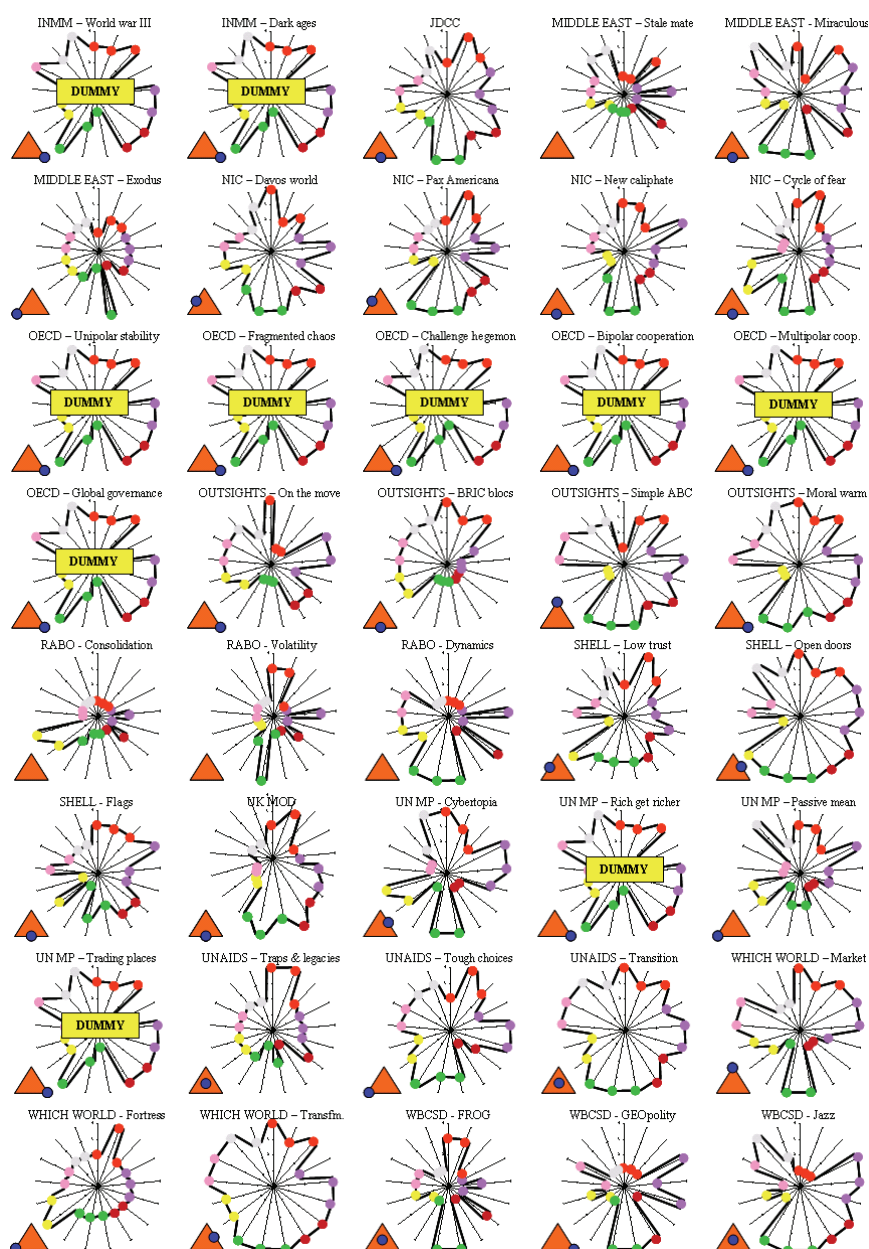
Figure 2.14: Driver values for all scenarios – actual radar charts

2.4.3   Generating future security environments

2.4.3.1   'Method'

The project team contemplated a number of different ways to generate 'new' scenarios out of the processing of existing scenario exercises.

- Our main initial intention was to use the ***frequency table*** (see Figure 2.13) to assist us in combining driver values into scenarios that would reflect the frequency distribution for those drivers across our scenario exercises.
- A second idea was to subject the sample of scenarios to various forms of ***statistical analysis***. *Cluster analysis*, for instance, could have been used to classify similar scenarios into families of scenarios, or more precisely, to partition the scenario set into subsets (clusters), so that the data in each subset (ideally) share some common trait – such as their proximity according to some defined distance measure. We would thus have identified 'families' of scenarios and could have chosen combinations of driver values that were typical for the most frequently occurring families.
- We could also have used various ***mathematical values*** for the driver values (e.g. mean values for one scenario; maximum and minimum for others) to assist us in selecting driver value combinations.
- Finally, we could have used our analysis to start sketching '***scenario spaces***' on the basis of the driver bandwidth that was observed across the scenario exercises instead of developing 'point scenarios'.

There was a majority view among the project team that the latter approach would be the most fruitful one for the purposes at hand (the NATO Long Term Requirements Study). But it was also clear that there was insufficient time available to arrive at useful results. At the same time, the project team felt somewhat uncomfortable with the three other more 'quantitative' approaches, because they still left too much indeterminacy to really be able to reliably 'couple' the finally chosen scenarios to whichever quantitative approach was chosen. Given time constraints, the team was ultimately forced to make some leap from the processing of the scenario exercises to the selection of 'point scenarios'. This was somewhat of a disappointment to the team itself, as it will undoubtedly also be to the readers of this report. But we remain convinced that at the heart of this problem lies a more fundamental dilemma – how one deals with uncertainty for strategic planning purposes. Whenever point scenarios are offered _ as they usually are – the choice of the final point scenarios will always entail an (arguably excessive and even misleading) enormous reduction of uncertainty. It is virtually impossible to select a handful of point-scenarios that would be 'representative' of the broad scenario space that the processing of the scenario exercises revealed. We therefore present the following 4 scenarios with only a modicum of methodological trepidation. We would also like to point out that we have still used the preceding analysis in a number of ways. We did select our own scenarios on the basis of our own intuition that was indubitably further honed by our newfound insights derived from those exercises. In the development of the actual scenarios, we also frequently returned to the initial scenario exercises to provide some of the 'meat' for our own scenarios. When looking for some clues about a more multipolar world, for instance, we used the radar charts as a legend to quickly identify those exercises that had a similar value for that driver, and we went back to re-read those scenarios. Finally, we also analyzed our own scenarios in the

same way we analyzed the other ones, and we are also presenting radar charts for them that can be compared with the radar charts for the other exercises.

2.4.3.2   White Dawn

The basic premise behind this future security environment is that of a profound discontinuity (for the better) with the present. A big shock in the system (in the plot a twin nuclear attack on Washington, D.C. and Brussels) galvanizes the West into a more radical and more effective approach to the world's many inequalities and grievances. Outwardly, both Europe and North America start tackling some of the root causes of terrorism and regional conflict in novel ways. Also inwardly, governments start coordinating better among and between themselves and building up more effective defensive capabilities. In this future security environment, one could almost say that catastrophic terrorism was the best thing that could have happened to the world, despite the horrific price that had to be paid for it. In many ways, this is an somewhat atypically[12] 'positive' scenario – the world is finally starting to build the 'new world order' that proved so out of reach in the immediate post-Cold War era. Yet the global terrorist network is still fighting a rearguard battle (an increasingly asymmetrical one) and regional conflict still exists in the Southern Hemisphere (mostly as a byproduct of clashes between modernity and traditional societies). But the big crisis of the early 21st century seems overcome and after 'Black dawn', a white dawn seems to be breaking.

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[12] Although it should be acknowledged that our processing of scenarios revealed quite a few 'positive' scenarios – see Figure 2.14.
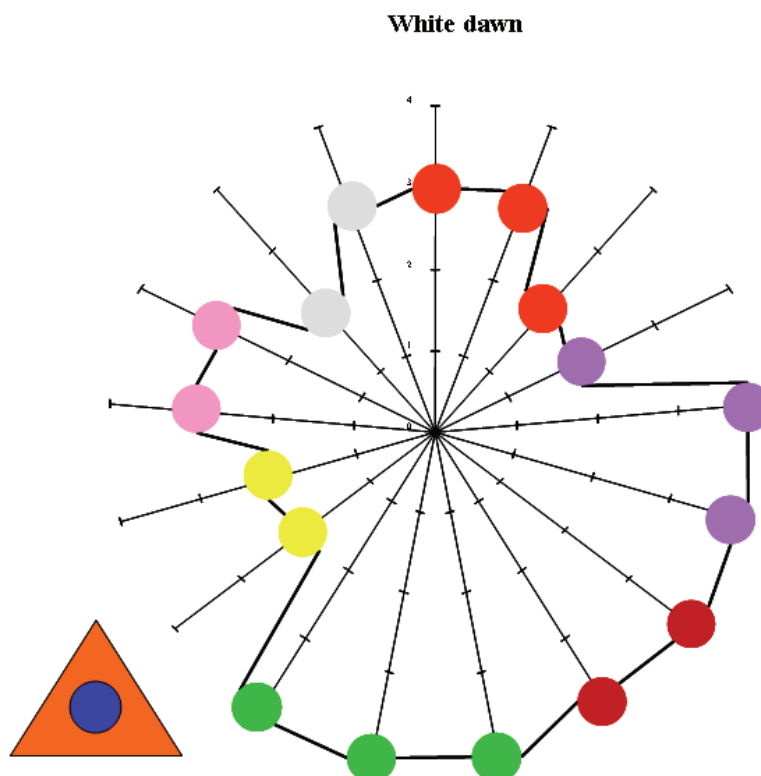
White dawn

Figure 2.15: White Dawn – radar chart

1. **Power variables**
   - **Polarity**. Post-unipolar (between a clearly unipolar world and a clearly multipolar one): US remains very powerful; Europe has rebounded; other parts of world starting to close the gap as well (because of more enlightened outreach)
   - **Location of power** – Combination US – Europe remains the most powerful player in world politics.
   - **Distribution of power** –power is relatively unevenly balanced in the international system because of continued 'Western' dominance.
2. *Attitudes*.
   - **Paternalism** –prevailing attitude in the West is one of 'steering' of world politics (top-down)
   - **Fear/Opportunity** –the world is viewed more in terms of 'opportunity', atmosphere of fear has abated
   - **Inward/Outward** – West has more of a 'pro-active', outward-looking attitude towards the world
3. **Regional Stability**

- **Stability** –there continue to be some regional conflicts (both inter- and intra-state in the developing world), but the system is becoming increasingly stable.
        - **Impact of regional instability –** the residual conflicts in the Southern hemisphere do matter to the West, as they undermine the new Pax Occidentalis.
4. *Technology –* we broke down the technological driver category in 3 drivers:
    - **Progress** - technological progress continues at its current high pace
    - **Distribution** - technology is broadly available throughout the world
    - **Effect** – technological developments have a net supportive effect on international stability
5. *Demography*
    - **Stocks –** overall world population levels are high (terrorist attacks of first decade of millennium has an impact; but levels rebounced)
    - **Flows** – volumes of population movements across borders are picking up again after a period of more restrictive immigration legislation
6. *Resources*
    - **Concentration** – resource endowments in the world are starting to be distributed more evenly.
    - **Scarcity** – some resources tend to be scarce, but less so than now (technological breakthroughs and increased energy efficiency of terrorist era – especially on energy - mitigate resource deficiencies).
7. *Legal/Institutional* - there exists a historically unprecedented system of fairly effective multilateralism – partially institutionalized, partially bottom-up.
8. *Economic situation* – world economy is in good shape
9. *Dominant actor* – balance of power between resurgent market forces (coming close again to the late 19th century); reactivated state actors; and ever more vibrant and powerful non-governmental actors.

2.4.3.3   The New Caliphate

The essence of this future security environment is that the Muslim World starts coalescing – first economically (into a New Islamic Community), but the increasingly also politically (and even militarily). Contrary to (Western) expectations, this change is not brought about 'top-down' by some charismatic religious or political leader, but 'bottom-up' through democracy and (intra-Islam) trade. In a relatively short period of time, however, the bulk of the world's oil supplies are now in the hands of a new Muslim-based political entity that lives in a tense relationship with the West and also increasingly start converting its economic and political muscle into military capabilities. The West – in decline (and asymmetrically so, as Europe is more affected by this scenario than the US is) – finds itself confronted with a twin threat: both internal (asymmetrical) and also external (both asymmetrical AND symmetrical).
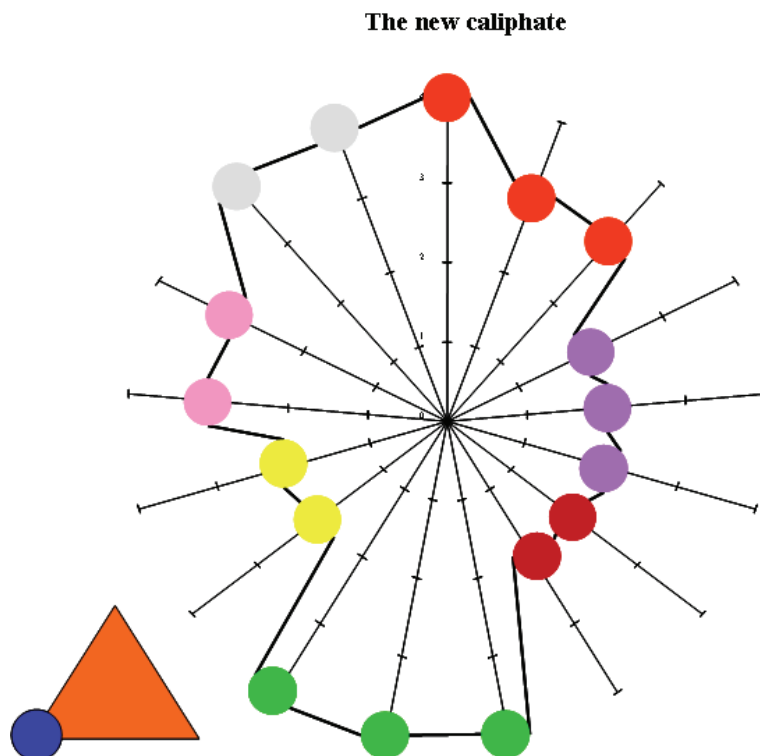
The new caliphate

Figure 2.16: The New Caliphate – radar chart

1. *Power variables*
   - **Polarity**. Multipolar world again – West Caliphate main antagonists; but China (- Xinjiang) and India (not part of Caliphate) also powerful
   - **Location of power** – neither West nor East are dominant in world politics.
   - **Distribution of power** – power is fairly balanced between between West, the Caliphate, China and India but not with rest of the world.
2. *Attitudes*.
   - **Paternalism** – West is unable to 'steer' of world politics; more a price-taker than price-maker
   - **Fear/Opportunity** – the West views the world more in terms of 'fear' than in terms of 'opportunity'
   - **Inward/Outward** – many countries/people have more of a defensive, inward-looking attitude towards the world
3. *Regional Stability*
   - **Stability** – not many regional conflicts (Caliphate stabilizes parts of Africa).
   - **Impact of regional instability** residual conflicts barely matter to the West, which is fully preoccupied with the internal and external threat of the Caliphate.
4. *Technology*

- **Progress** - technological progress slows down, and various parts of the world descend in obscurantism
- **Distribution** - technology is fairly evenly available throughout the world (at least West, Caliphate, China and India)
- **Effect** – technological developments cannot fundamentally affect international stability, but there is a dangerous proliferation of various destabilizing weapons – e.g. weapons of mass destruction.

5. *Demography*
   - **Stocks** – overall world population growth slows down (economic hardship and attitude of fear)
   - **Flows** – volumes of population movements across borders are low, even within the Caliphate (where in theory borders have become irrelevant)

6. *Resources*
   - **Concentration** – resource endowments in the world are distributed increasingly unevenly (energy hoarded by Caliphate).
   - **Scarcity** – resources tend to be scarce.

7. *Legal/Institutional* - there exists no more functional system of international governance

8. *Economic situation* – the world economy is in bad shape

2.4.3.4   Revenge of the Dragon

Revenge of the Dragon depicts a future security environment scenario in which the West is once again confronted with a peer (or at least near-peer) competitor (in this scenario China). The West, preoccupied with fighting Islamist terrorism, gradually sees its power erode to the benefit of a growing Chinese superpower. China forges several alliances with Middle Eastern energy-suppliers who increasingly enter into in China's sphere of influence. The world seems to be heading towards a new (this time truly East-West) bipolar system.
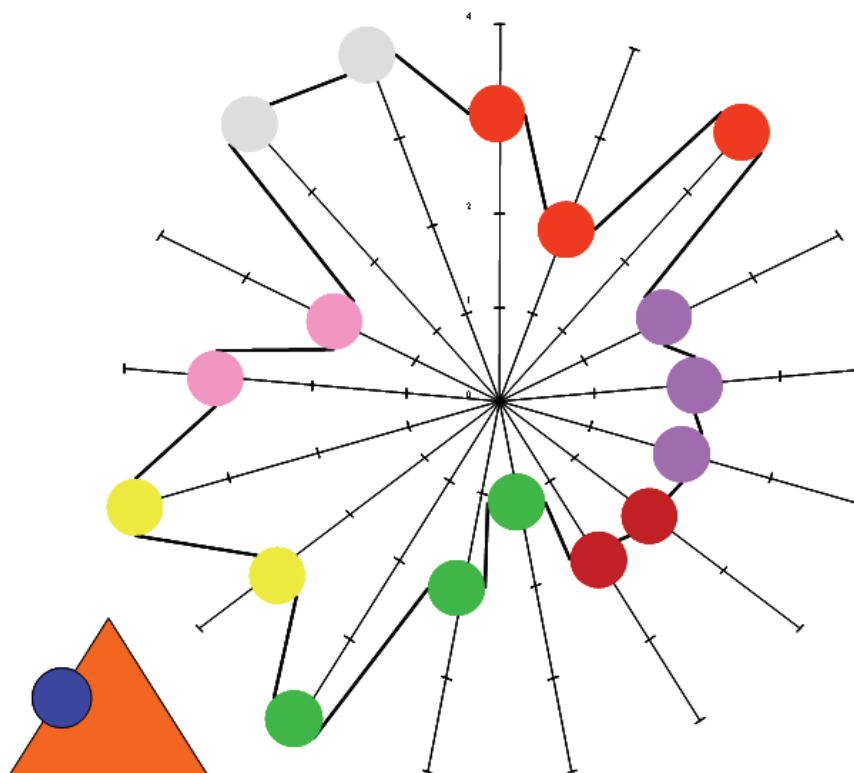
Figure 2.17: Revenge of the Dragon – radar chart

1. ***Power variables***
   - **Polarity**. Return to a bipolar world – but embryonic stage
   - **Location of power** – East is dominant in world politics
   - **Distribution of power** – power is more relatively evenly balanced in the international system, at least between the two poles
2. *Attitudes*.
   - **Paternalism** – Both poles try to steer events in their 'bloc', but is difficult (both are still about as much price-makers as takers
   - **Fear/Opportunity** – growing prevailing attitude of fear in the West (but not like in the New Caliphate)
   - **Inward/Outward** – countries/people have more of a pro-active, outward-looking attitude within the Western bloc
3. ***Regional Stability***
   - **Stability** – few regional conflicts (whether inter- or intra-state) as blocs re-impose stability (West in Africa and Latin America; China in Central Asia).
   - **Impact of regional instability** – residual conflicts do not really matter to the West--
4. ***Technology***

- **Progress** - technological progress continues, but because globalization is partially reversed slows down
- **Distribution** - technology is available within the blocs but not outside of it
- **Effect** – technological developments cannot fundamentally affect international stability, proliferation of various destabilizing weapons is stopped.
5. *Demography*
   - **Stocks –** overall world population levels high
   - **Flows** – volumes of population movements across borders lower – also within blocs more uncertainty and protectionism
6. *Resources*
   - **Concentration** –resource endowments distributed fairly evenly between the blocs
   - **Scarcity** – resources tend to be scarce in certain areas, but are still available within the blocs (e.g. energy in West partially from North-Africa, partially from Russia (and maybe some Caspian oil)
7. *Legal/Institutional* - the system of international governance is blocked because of Chinese obstructionism
8. *Economic situation* – the world economy is not in great shape

2.4.3.5   The Emperor has No Clothes

In this future world, the West falls victim to its own success. The security environment starts out looking very much as it does today (with a constant but relatively modest stream of terrorist attacks across the world and with markets, states and citizens adjusting to this new phenomenon). Most of the initiatives that were in the pipeline in 2005 (e.g. NATO-NEC) have come to full fruition, and the network IS increasingly becoming the center of the West's external actions. The Global Information Grid, connecting all of the West's instruments of power, gives the West asymmetrical advantages over all adversaries. At the same time, technological progress continues and the world economy grows with leaps and bounds – leading to a ever more pronounced 'flattening' (Friedman – leveling of the playing field) of the world. Yet this same 'flattening trend' suddenly turns itself against the West, also in the military realm. The offense-defense balance reverses itself. Situational awareness is increasingly available to everyone; C4ISR becomes more difficult rather than easier; the 'network', on which the West has become increasingly dependent, suddenly proves itself far more vulnerable than anybody had anticipated. In one fairly robust peace support operation, an adversary succeeds in blinding the West's forces. Demand for stabilization efforts persists – in the form of residual social disorder (due to the rapid pace of change in traditional societies) and ethnic violence in parts of the Southern Hemisphere. But the supply of stabilization efforst declines as the cost of intervening abroad rises spectacularly, with damaging consequences for both deterrence and compellence.
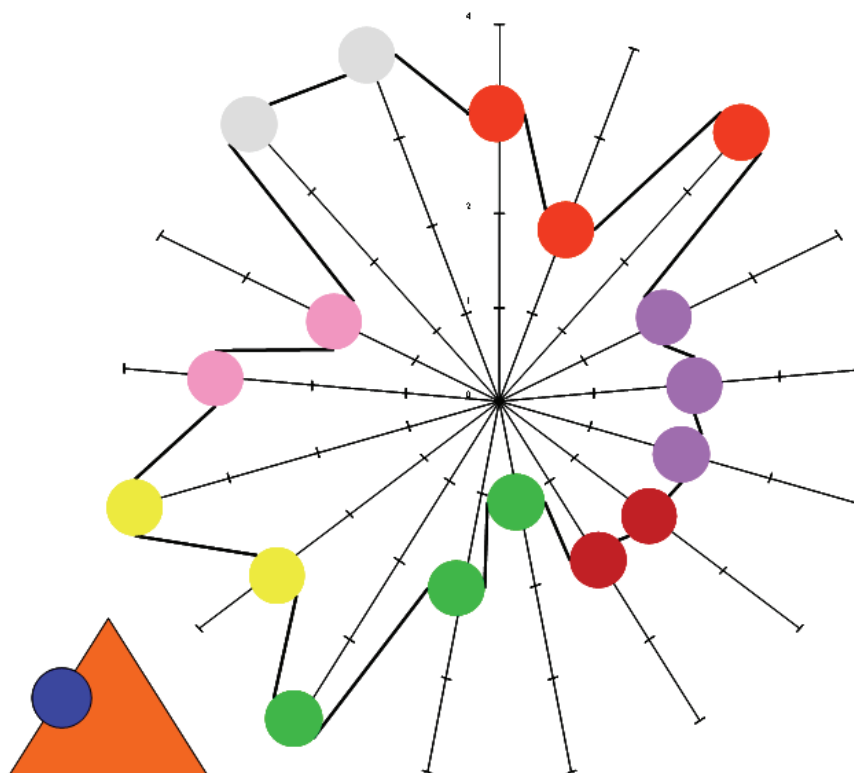
Figure 2.18: The Emperor Has No Clothes – radar chart

1. *Power variables*
   - **Polarity**. Post-unipolar world – US weakening
   - **Location of power** – shifting from West to East (military element now subordinate to other elements of power).
   - **Distribution of power** – power relatively evenly balanced in an open international system
2. *Attitudes*
   - **Paternalism** – more 'laissez-faire' (bottom-up - 1), although West would like to steer more (impeded by military impotence)
   - **Fear/Opportunity** – whether the world is viewed mostly in terms of opportunity, mixed with some fear (as the steering ability of the West – especially its military instrument has declined)
   - **Inward/Outward** – countries/people in the 'Western' world have more of a politically pro-active attitude throughout the world in non-military terms; and a more defensive one in military terms
3. *Regional Stability*
   - **Stability** – there are a sizeable amount of regional conflicts (both inter- and intra-state) in the developing world (deterrent effect disappears).

- • **Impact of regional instability** these conflicts only partially matter to the West.
4. *Technology*
    - • **Progress** - technological progress continues at its current high pace
    - • **Distribution** - technology is broadly available throughout the world
    - • **Effect** – technological developments have a net disruptive impact on world stability (high proliferation of various destabilizing weapons – e.g. weapons of mass destruction).
5. *Demography*
    - • **Stocks –** overall world population levels high
    - • **Flows** – volumes of population movements across borders medium (borders are open)
6. *Resources*
    - • **Concentration** – resource endowments in the world distributed evenly.
    - • **Scarcity** – resources tend to be available (e.g. technological breakthroughs mitigate resource deficiencies).
7. *Legal/Institutional* - there exists a functional system of international governance (including legal norms)
8. *Economic situation* – the world economy is in excellent shape

3.   Future NATOs

3.1   Introduction

The second main task of this study was to develop a set of Future NATOs. Contrary to the rich universe of formal scenario-exercises about the future of the world (and even of the security environment), there have not – to our knowledge – been any similar systematic exercises about the future of NATO. There is much literature on things that are supposedly right or wrong with NATO today, and about where NATO might be heading – but most of it tends to be primarily political (and frequently purely polemic) in nature. Since the purpose of this project is to provide contextual inputs in the NATO defence planning cycle, we needed a more rigorous analytical approach to this topic. The project team therefore decided to develop its own methodology for this – based on the literature about scenario-building, on the team's own rich experience with such exercises, and – most importantly – on the purposes at hand (both directly – in that the alternative NATOs were subsequently to be coupled with the alternative security environments; and indirectly – in that those Future Worlds were in turn to be used as context for the generic planning situations for a number of NATO mission types that would help guide the derivation of long-term capability requirements).

This part of the report will document the methodology that was used to generate these alternative NATOs, will describe both the process and the outcome of a special 'Future NATOs' workshop that was organized by CCSS on the basis of this methodology, and will finally present and analyze the 5 alternative NATOs that were thus generated.

3.2   Methodology

3.2.1   Type of 'scenario'-exercise

In preparing the scenario exercise, the CCSS project team examined a number of different types of scenario-exercises
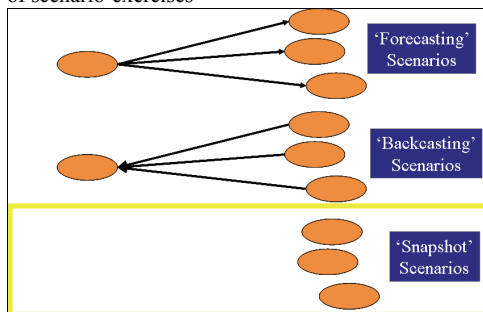
Figure 3.1: Typologies for scenarios

3.2.1.1   'Forecasting' scenarios

This type of scenario exercise starts from an analysis of the current situation and attempts to project alternative trajectories *from that baseline*. If we had followed this method, the scenario groups would have started off with a discussion about the key issues within NATO today, would then have tried try to identify the main drivers that might affect change, and would have worked 'forward' from there to the development of a number of alternative scenarios. The team identified three main flaws with this approach:

- Given the (high-level) nature of participants of the scenario workshop, the discussion would have been likely to veer off towards 'familiar' discussions about things that are 'right' or 'wrong' with NATO today. These familiar discussions would have tended to reinforce existing dividing lines between participants (NATO 'insiders'/'outsiders'; military/civilian; 'hard-liners'/'softies'; Atlanticists/Europeanists etc.);
- The discussion would also have tended to be driven by (presumed) *causality* ("if this happens, then NATO will change in this way"), and not by broader *possibility*. Given the relatively poor knowledge of the system dynamics undergirding NATO's future, this would have lead to an unnecessary reduction of possible alternatives;
- Participants of this type of scenario exercises typically find it hard to divorce themselves from the present, and to be more creative about the future. In general, these discussions tend to be more normative ("what 'should NATO be") rather than exploratory (what 'could' NATO be). Such scenario exercises tend to gravitate towards three basic scenarios (pessimistic, 'muddling through', optimistic) whose main differentiating features derive from the present, not (possible) futures.

3.2.1.2   'Backcasting' scenarios

In this type of scenario exercise alternative futures are taken as the starting point. The participants then discuss how those alternative futures bear on the present. Given the LTRS background of this particular exercise, the backcasting option was seen to be inappropriate, as its main focus is normative (which future does NATO want to go for and what do we have to do now to get there; or which NATO do we not like, and how can we avoid it). It was pointed out, however, that the scenarios that would be generated in the current exercise could at a later stage still be used (in a different context) for such an exercise.

3.2.1.3   'Snapshot' scenarios

In this type of scenario exercise alternative futures are developed *without direct coupling* to the current situation.
Again given the LTRS context of this exercise, the CCSS project team opted for this type of scenario-exercise. The main advantages were thought to be the higher likelihood that participants might be able to:

- free themselves from the current policy debates;
- engage creatively in imagining Future NATOs;
- capture more of the thinkable uncertainties surrounding Future NATOs.

As possible disadvantages, the team identified:

- The difficulties in providing some 'discipline' (both in time and in substance) in the development of the 'snapshots';

• The danger of arriving at overly 'wild' scenarios.

In order to minimize these disadvantages, some counter-techniques were consciously built into the design of the protocol of the scenario-exercise (parallel syndicates; a clear protocol with some clear steps designed to deliberately counter or at least channel some of these dangers. Both the process and the outcome of the actual 'NATO futures'-workshop seem to validate the option retained.

3.2.2   Anatomy of a Scenario Exercise

Any scenario-exercise has a number of elements that have to be carefully structured to obtain optimal results, as illustrated in Figure 3.2: Anatomy of scenario-exercises.
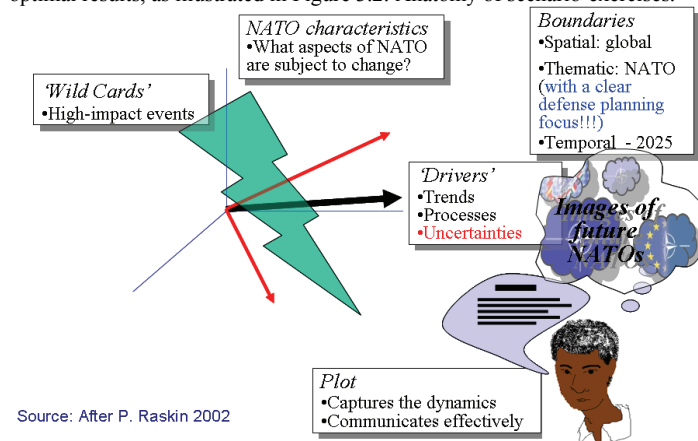
Figure 3.2: Anatomy of scenario-exercises

1.   Boundaries

The first step is always to delineate the boundaries of the scenario exercise in space, focus, and time – in order to avoid that the discussion get sidetracked on topics that may be interesting per se but fall outside of the purview of the exercise at hand. For this exercise, the boundaries were essentially identified by NC3A and are:

• Spatial: global – there were no limits on the geographical focus of the exercise, in line with NATO's new global reach (e.g. NATO's presence in Afghanistan)
• Thematic: NATO – the main aim of the exercise was to develop plausible Future NATOs
• Temporal: medium term. The time horizon for thise exercise was 2025.

2. Key characteristics

A key element in our method is to identify the key characteristics of the object to be studied that are subject to change. These characteristics are first to be identified, clustered and prioritized. At the same time, a rough metric for the spectrum of change of each characteristic is to be developed, and some sense of the plausible bandwidth within that spectrum (in an attempt to reduce some uncertainty if and only if this is possible and/or reasonable). Our preference is to focus on characteristics first, as it steers the discussion from the very beginning in a more

analytical – and hopefully constructive – direction (as opposed to the more usual 'political' discussions).

3. Key drivers
A second key element is to identify generate the key driving forces that are likely to affect change in the characteristics identified in the first step.

4. Wild Cards
A third important ingredient is to consciously focus the group's attention on some 'wild cards': exogenous 'shocks' that might provide major discontinuities in the (more gradual) drivers identified in the previous step. While some of these may already have emerged in the discussion about drivers, a deliberate attempt to generate some more may be useful for generating the final scenarios.

5. Plot
Finally, these various elements are to be combined in a number of 'plots' – internally consistent and plausible combinations that give enough of a flavour for the entire scenario space to be useful for strategic planning purposes.

To illustrate these generic elements, the following figure presents some notional examples of what all of this would mean precisely for a scenario exercise on Future NATOs.

3.2.3   NATO characteristics
To illustrate what is meant by 'characteristics of the object to be studied', *Figure 3.3: Key NATO Characteristics* shows some notional examples of two characteristics of Future NATOs that are of relevance to defence planning:
- the mission spectrum that member states might confer upon NATO;
- the actual composition of those member states.
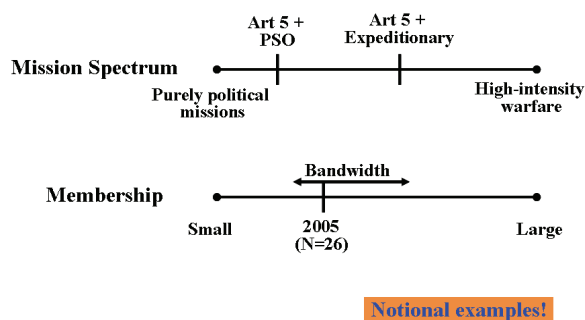
Figure 3.3: Key NATO Characteristics

For every characteristic, a spectrum can and should be identified. With respect to mission spectrum, for instance, this spectrum could go from purely political missions (e.g. in an environment where there is a backlash against military interventions in far away places, e.g.

because of a number of mishaps in Kosovo, Iraq and/or Afghanistan) to more NATO involvement in high-intensity warfare (e.g. in an environment where some peer competitor develops powerful symmetrical military capabilities by 2025 and threatens regional stability in an area of perceived NATO vital interests). Various points along this spectrum could be identified – one environment in which NATO is essentially tasked with the remaining Article 5 mission plus a number of military tasks in the lower ranges of the conflict spectrum; and another where NATO also gets additional missions for more robust expeditionary warfare in non-permissive theatres.

Another possible key characteristic is actual NATO membership. The spectrum here could be defined from zero (in case NATO would cease to exist) to a large number of member states. NATO has in recent years expanded to its current membership of 26. A discussion about the plausible bandwidth might conceivably narrow the theoretical extremes (or it might not). In this case, for instance the scenario group might decide that the zero value for this driver is implausible in the timeframe envisaged (even an organization such as WEU – that has for all intents and purposes been terminated – still formally exist). On the other side of the spectrum, the process of expansion could be continued, could be stopped, or could even be reversed (as has happened in the past when for instance France withdrew from the NATO military structures). Under certain conditions, it may even be conceivable that NATO expands to include some countries (e.g. Russia, Australia) that might radically alter its nature – and hence also its defence requirements.

3.2.4   Coupling drivers and characteristics

The scenario exercise had to generate a number of key drivers through a similar process as for the characteristics: identifying, clustering and prioritizing them; and then developing a metric for them. This was to lead to a two-by-two matrix in which drivers and characteristics are mapped.

Character-istics 'Drivers'	Missions	Membership	…
Active US leadership			
Threatening China		?	
…			

Figure 3.4: Matrix of Drivers and Characteristics

Here again two notional examples may illustrate the process:

- The role played by the United States could be seen as a key driver of the future of NATO. That role is not a foregone conclusion, as indeed both the interest of the US in NATO and the extent of its leadership have ebbed and waned in the past decades. Once this 'driver' has been identified as a key one, the scenario group then can discuss in what direction this driver would push a number of the key identified NATO characteristics. This may yield a working assumption, for instance, that a more active US leadership would tend to push both

NATO's mission spectrum and its membership upwards. The group could come to the conclusion that this driver might even be more salient (would produce more change) in the mission spectrum than in the membership composition.

- The scenario group might also find that a second notional driver – the emergence of a more economically/militarily capable and politically assertive China – may tend to push the mission spectrum upwards (because of the re-emergence of a militarily symmetrically capable potential adversary), but may be indeterminate as to its impact on membership (depending on Russia's or Australia's relationship with China, for instance, the debate of including these countries in the Alliance might regain momentum).

It has to be pointed out that these examples were not used in the presentation of the methodology to the scenario group – both not to pre-empt the outcome of the discussions, and to avoid substantive discussions about them. The example given for the workshop was one from another scenario exercise about Russia.

3.2.5   The Future NATOs workshop

3.2.5.1   Participants

The actual workshop took place with a wide but high-level scenario group coming from a number of different backgrounds (current and former policymakers from The Netherlands Ministry of Foreign Affairs (MFA NL) and the Ministry of Defence (MoD NL); professional military; opinionmakers, researchers and academics).

Syndicate 1	Syndicate 2
Mr Willems (CCSS, leader)	Mr Kleyheeg (CCSS, leader)
Mr Bekkers (CCSS, rapporteur)	Mr Rademaker (CCSS, rapporteur)
Ms Pijl (TNO, assistant)	Ms van der Beijl (TNO, assistant)
Mr Boeke (CCSS)	Mr Amersfoort (Professor Military History Univ Anmsterdam)
Mr Brouwers Corr. For Pol, Volkskrant newspaper)	Mr van Kappen (MajGen, RNMC (ret), ex Military Advisor to the UN SecGen)
Mr de Haas (Col RNAR, Clingendael)	Mr Klumper (LtCol RNLAF, Defence Staff)
Mr Jochems (Director Security Policy, Min Foreign Affairs)	Mr Korteweg (CCCS)
Mr Van Reijn (MajGen RNMC (ret), ex head NL Mil Intel)	Mr van der Meijden (LtCol RNLAF)
Mr Schouten (LtGen, Ex Chief RNAR, ex Director NATO CJPS)	Mr van Rijn (VAdm RNN, ex SACLANTREPEUR)
Mr Voorhoeve (Council of State, ex NL Minister of Defence)	Mr De Spiegeleire (CCSS, ex-RAND)
Mr de Wijk (Director CCSS, ex head policy planning, NL MoD)	Mr Venema (Head Policy Planning, NL Min Foreign Affairs)

Figure 3.5: Participants of the Future NATOs workshop

3.2.5.2   Protocol of the workshop
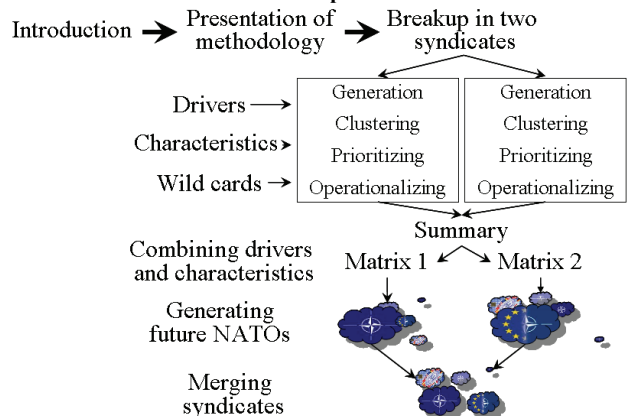
Figure 3.6: Protocol for the Future NATOs workshop

After the introduction and the presentation of the workshop's methodology, the scenario group split up in two mixed syndicates of about 10 people each. In the morning, the participants of the syndicates were given 10 sheets to individually write down a number of what they felt to be key characteristics, drivers, and wild cards on differently coloured sheets of paper (one item per sheet). These sheets were then taped to the wall, and a discussion ensued about similarities and differences between the sheets. They were subsequently clustered within their respective groups (e.g. drivers were clustered in internal and external; geographical and functional; etc.) and prioritised (e.g. which characteristics are in the group's assessment the most salient ones). The results of this were a number of lists with prioritised characteristics and drivers, as well as a number of wild cards.

Towards the end of the morning sessions, the two syndicates came together for a plenary session, at which the rapporteurs reported the findings of their respective syndicates. While the participants were finishing their lunch, the scenario team took a close look at the two lists, and found that there was enough overlap (also considering the actual discussions that preceded the consolidation of the lists) to allow for the two lists to be merged into one matrix. Had this not been the case, the plan had been to mix up the two syndicates, and to proceed with the two matrices to see what scenarios would emerge out of them. This would have allowed for some cross-fertilization of ideas, without losing the potential advantages (in terms of robustness of findings) of having two teams thinking in parallel.

The results of both the syndicates regarding the characteristics are shown in the following charts.

Syndicate I /Characteristics

Coalitions	Leadership	Decision-making	Ambition	Membership
alliances with parners/allies on other continents	US leadership in NATO (in special military and technological)	Decision-making process	lower? nuclear umbrella	30+ members Instrument for peer pressure enlargement with F\R and Ukraine
Area of Operations	**Organization**	**Capabilities**	**Missions**	**Politics**
Global - forward operating bases	multi-funcational command structure	training cooperation improve interoperability transformation /network-centrism	deterrence- defence peaceoperations (military and civ-mil)	political organisation
Global role in stability/security	NATO defence planning	effective military power military and civil-military	counter-terror response to security risks (terrorism, piracy, local crises)	political leadership
	top-down / bottom-up	broad deployability champion high-tech warfare (space weapons)	defence of vital interests (more than territory)	improve democratic values
		NRF success? EU military capabilities: success ECAP and PCC	humanitarian missions	forum for political consultations
			Out-of-Area operations Division of roles NATO-EU: NATO - initial entry & far way/ EU s&r & close-by	improve economic-military basis focal point for miltiary and strategic thinking
				political stature
				Instrument in US for US national security strategy
				forum for political consultation: US-Europe/ Europe internally differences in culture; US 'hard'/ Europe 'soft'

Figure 3.7: Results syndicate 1: Characterics

SYNDICATE II/ NATO Characteristics

Uncategorized	Operational Cooperation	Capabilities	Scope	Mission Spectrum (just military - also other instruments)	Identity	NATO; the END
Coherence ESDP EU	Centrality of NATO's Role in Defence Planning	Ballistic Missile Defence Financing Modalities (NISP - Common Funding)	Geography/ Global Tasks/ Scope	coalescing military instrument with Econ/Political Diplomatic/ NGO's	Political/ Military organization	Imperial Overstretch
Bottom Up vs Top Down	Homogeneity (politics)		Global or Dead	NATO only used for follow-on ops	Poltical vs Military Role NATO:	Extinct
Burke vs Kant	Homogeneity (operational)	NRF (x10)	Global vs Regional	Mission spectrum; predictability	political vs Military	
membership	Framework for Coalitions/ Interoperability	power projection capabilities	Role NATO: out of area - global/ european neighbourhood	Mission Spectrum	NATO becomes a more political organisation	
Allies vs. Vassal States of USA	Degree of Network Centrism	Stabilistaion Reconstruction Capacity	Geo-focus external-internal	Mission: plurifrom/ unpredictable	Regional security organization (euro-atlantic region)	
US Total Domination	Political Willingness/ Decisionmaking				Pol.Military Alliance	
	Framework for Coalitions Burdens haring between Us and the rest and within Europe				Political/ Military Alliance Transatlantic Alliance	

Figure 3.8: Results syndicate 2: Characterics

The results of both the syndicates regarding the drivers are shown in the following charts.

Syndicate I/ Drivers

Institutions	EU (and member states)	Threats	Economy	(New) powers		Resources (scarcity)	Technology
United Nations	integration or split competition with	Terrorism	Economic capability member states political capability member states	United States:	position and interest and European interests	(weakens Western economies)	increase gap EU-US
NATO	NATO	Irregular				energy competition	proliferation
WEU-ization	Political-military developments	Conflicts	perception of democracy		and periphery	water	development
military NATO - interoperable/ doctrine	Defence efforts con/divergence	Greater Middle East	global developments		focus on Asia loses role as	world health and	
temp agency	ESDP	New Nuclear States	economic ranking as outset		hegemon	countermeasures temperature	
Exclusive NATO - only organization for military operations	threats	Nuclear War in Middle East	Fair global economy		ties with Europe	increase of 5 degrees	
Political NATO	perceptions of interests	Islam			a unipolar system	increase world population (25%)	
	resurgence EU economy	Islamic Extremism				decrease population in Russia	
	solution EU-crisis after 'non'	States				growth vs. aging population	
	introvertion EU integration	Groups		Rise of Asia	world leader		
	CFSP/ESDP	Regional Conflicts		China	con/divergence with the West		Natural threats
	vision on transatlantic relations	Large military conflict in South East Asia					
	Old vs. New Europe			India	India > China		
	Old vs. New Europe				technology leader con/divergence with the West		pandemics
				arabic/persian world			environment
				Russia as new military superpower			demographics
				Alliance Russia-China			
				Central Asia-Caucasus			

Figure 3.9: Results syndicate 1: drivers

SYNDICATE II/ Drivers

Resources	International Economy	Coherentie GBVB/ EU [Coherence ESDP/ EU]	Power Shift Geo-Players	Power Shift US Intern	institutional Roles	Threats
Oil & Gas	Economic Growth or Lack of it	European Cohesion [ESDP...]	US more focused on Greater China	Transformation	ESDP, Asian Regional Organizations	Future of Genocide
scarcity of water, oil & gas, food		Political Gap USA <-> Europe	China	American Internal Politics Transatlantic	Perception Threats/ Security US vs Europe	Authoritarian Regimes Increased Number
Grondstoffen Schaarste [Resource Scarcity]		EU role increases (ESDP)	China	Relationship on non-military affairs Increase of Ideology	UN reformed or not, and how Participation: nato, eu,	of nuclear weapon states incl 'rogue' Future of Inter-state
		Marginalization Europe	Russia	in Politics	osce, UN Global Quality of	conflict
		European Integration or Lack of it	Development of China and India	Internal Politics US Foreign Policy	International Governance	Central Asian Stability
		Further Unity of Europe	China	(Unilateral-Multilateral)		Transnational Crime
			Transcaucasus <-> Central Asia			Demographic Trends: Eurabia vs. Latino US
			China <-> Russia			Catastrophic Terrorism WMD Proliferation
						Asymmetric Threats

Figure 3.10: Results syndicate 2: drivers

During lunch, the project team decided that there was enough overlap between the two syndicates to consolidate the matrices into one matrix that would again be submitted to the two syndicates for further discussion. The afternoon session then proceeded with the same syndicates as in the morning, which were both given a single matrix of drivers and characteristics. The two syndicates attempted to fill out the cells in the matrix, which was a difficult task given the many drivers and characteristics that had been identified. But out of this

discussion, there nevertheless emerged two reasonably similar (embryonic) scenario-sets that were then merged in the second and final plenary session.

	What is Security?	US Policy	Europe	India	China	Russia	Instable Greater Middle East	Non-state actors	Role of Institutions etc.)	Economy	Resources	Politics and Ideology	Technology
Transatlantic link													
US Leadership													
Area of Operations													
Decision-making													
Top down guidance													
Spectrum of Missions													
Capabilities													
Political vs. Military nature of Alliance													
Membership													

Figure 3.11: The Consolidated Matrix

Common threat with large military component

Facilitating NATO

Status quo

Dominant VS, Europe follows

Threat-based capabilities, little cohesiveness between countries

Internal driver: Weak Europe

Strong cohesive NATO

Dominance, Revival

Power Projection

Strong NATO

Cohesiveness in capabilities generation

Internal driver: Strong Europe

Powerless/Irrelevant NATO

Survivability at stake

WEU

Fragmentation within capabilities along 2 axes (countries and threat)

Strong NATO a la carte

Realism

NATO as temp agency

Toolbox of capabilities (both military and humanitarian)

Distributed threat (natural security threats, terrorism, etc.)

Figure 3.12: Future NATOs syndicate 1

Syndicate 1 used the axes 'Threat' (whether there was a strong threat that was perceived similarly on both sides of the Atlantic and and had a strong military component; or whether there was a more diffuse threat that was perceived in different ways by different allies) and 'Europe' (whether Europe was strong or weak)[13]. This two-by-two matrix yielded 4 different NATOs that are briefly described in the cells of Figure 3.12: Future NATOs syndicate 1.

Syndicate 2 used the axes US Leadership (whether US assumed a leadership role in Europe or not) and Europe (similar to the other syndicate) and thus also generated a number of different NATOs within this two-by-two matrix, as illustrated in Figure 3.13: Future NATOs syndicate 2.

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[13] It may be interesting to point out that this group felt that US attitudes towards NATO (a key driver for the other syndicate) would be a derivative of whether Europe was weak or strong.

This syndicate also argued that internal drivers would really determine where NATO would go – much more so than external ones. They visualized this by drawing a 'firewall' around their 2-by-2 matrix that would essentially ward off outside events. Thus a major common threat would only be seen as such if both the US and Europe would agree it was one (again very similar to the logic of syndicate 1.
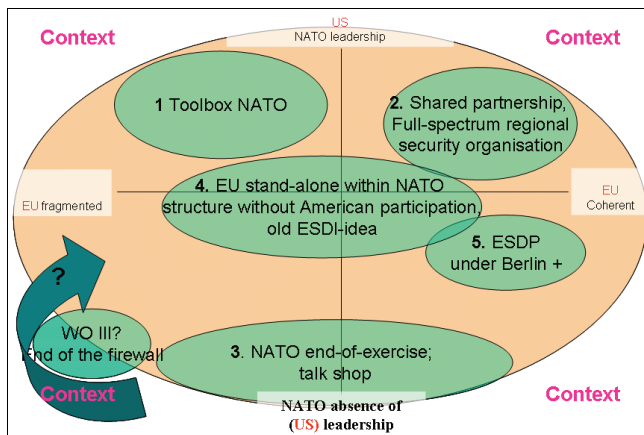
Figure 3.13: Future NATOs syndicate 2

In the final discussion, the plenary group took the decision to use all three axes that had been identified in the syndicates. This was all the more logical, since many participants of syndicate two felt the threat driver (which they had discussed) was missing from their matrix; while not all participants in syndicate 1 shared the idea that the US attitude towards NATO would simply be a derivative of what would happen in Europe. After a final discussion, the majority of participants agreed that the two-by-two matrices were too constraining a format, and agreed to use the following 3D-model as depicted in Figure 3.14: The consolidated NATOs.
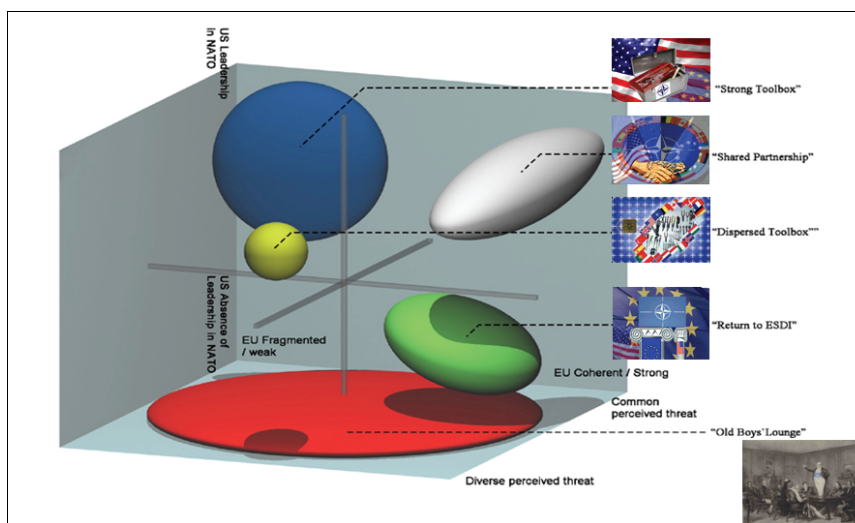
Figure 3.14: The consolidated NATOs

3.3   Five Future NATOs

As seen in the previous chart, the scenario workshop generated 5 different NATOs with distinct positions within the three-dimensional 'NATO-space' that had been developed. In this part of the report, the five alternative NATOs will be presented – each with a brief description of the main characteristics (see following table)

Characteristic	Scales and Values		
Transatlantic link	Strong		Weak
US Leadership	Absent	Equal EU	Strong
Area of Operations	Regional		Global
Decision-making	Absent		Effective
Top down guidance	Ineffective		Effective
Spectrum of Missions	No focus		Broad focus (full spectrum)
Capabilities	Limited		Effective expeditionary
Political vs. Military nature	Political		Military
Membership	No		Significant

Table 3.1: Scales and values for each characteristic

The following characteristics, distilled from the two syndicates, were finally retained:
*   **Transatlantic link** - the strength of the link – both political AND operational – between (mainly) the United States and its European allies. This has historically fluctuated since the Washington Treaty between very strong (Cold War period) and more tenuous (e.g. prior to

NATO's engagement in the Balkans and in the period surrounding Operation Iraqi Freedom). The syndicates both contemplated the possibility that this link might further deteriorate and weaken.

- **US Leadership** - the extent to which the United States remains engaged in NATO and willing to assume a leadership role (which need not be exclusive). This characteristic has also oscillated since the Washington Treaty – with very firm and visible US leadership during most of the Cold War, and more vacillations since then.
- **Area of Operations** - the geographical range within which NATO can operate. During the Cold War, the conventional interpretation (typically based on an updated reading of Article 6 of the Washington Treaty) was that the Alliance should only become active on its own territory. More recently, those geographical restrictions have been relaxed (as in the case of Afghanistan), but the scenario group did not take it as a foregone conclusion that the more global reach of NATO would be permanent.
- **Decision-making** – the extent to which the Alliance is able to make tough decisions. This aspect of NATO has also changed significantly over the past decades. While never easy because of the formal requirement of unanimity, decisions have historically been greatly facilitated by initially the shared perception of the Soviet threat, and subsequently still the enormous asymmetrical leverage of the United States within NATO. As those two factors started changing (not least because of Europe's gradual re-emergence as a strategic actor) the decisionmaking process within NATO has become more cumbersome.
- **Top-down guidance** – the extent to which NATO as an organization is able to sway the decisions and actions of its member-states. This ability has never been as large as popularly perceived, as the history of force goals within NATO clearly demonstrates. It could either increase again or decrease even further.
- **Spectrum of Missions** – the range within the conflict spectrum in which NATO can carry out missions. Since the end of the Cold War, that range has clearly moved 'downwards', to include military operations other than war (and increasingly also to exclude high-end operations as a coalition). A number of possible vectors for NATO's future mission spectrum were discussed in the group
- **Capabilities** – the alliance's effectiveness in the joint application of its coercive instruments (depending largely on the future security environment either more military or more 'holistic'). This was interpreted to include both the coercive assets and capabilities as well as the Alliance's operational cohesiveness (which could either be achieved through interoperability OR through some division of labour).
- **Political vs. Military nature** – the balance between the Alliance's political and military dimensions has changed to some extent since the end of the cold war (e.g. through various outreach programs for third countries), but it remains overwhelmingly geared towards the joint use of the military instrument. This may either continue to be the case (or even strengthen under certain scenarios); or could change in the direction of a more political alliance.
- **Membership** – NATO has gone through a number of enlargements and (a few semi-[14]) reductions in the past decades. Whereas the recent trend has been towards ever more members, the scenario group agreed that the future trend may work in both directions: some new members will undoubtedly still join NATO, but some might also opt out.

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[14] France (1966–today) and Greece (1974-1980) withdrew from NATO's integrated military command structure.

3.3.1 Strong Toolbox NATO

Figure 3.15: Strong Tool box NATO

Combination of strong US leadership in NATO, a strong commonly defined security perception and a relatively weak and fragmented Europe.

The United States remains the key driving force behind NATO transformation and is the dominant player in the international arena. European enlargement has not resulted in increased political unity, and the European Security and Defence Policy continues to lack strong coordination and efficacy. On both sides of the Atlantic there is a common perception of the threats facing the Alliance and European states consider NATO the preferred instrument for projecting power in order to enhance global stability. However, a common political outlook has not been translated into a substantial overall increase in defence capabilities. As a result the ability to operate along with the United States in the higher spectrum of conflict is reserved to merely a few of the European allies.

The EU is not capable to command major theater full spectrum operations without strong Command & Control support of the US. The technological gap between the two continents is still slowly growing although in recent year the EU pick up some speed.

The NRF has been used in world wide missions and continues to be a vehicle for transformation, and interoperability standards are maintained and further developed, but most European member states can only offer limited expeditionary capabilities to crisis-management operations. The EU agility and response to necessary operations is from the US perspective to slow still. Nevertheless, the US continues to be interested in European niche capabilities, and continues to see NATO as the preferred forum to nurture actual or potential capable force providers. Likewise, the European member states perceive NATO as the privileged instrument through which to use their armed forces. As a consequence, the Alliance is a potent, flexible and modular toolbox, for which the mission at hand and the ability of individual members to contribute to military operations determines the composition of a coalition.

Summary
- USA remains key driving force in NATO transformation and dominant global player;
- European states consider NATO as the dominant instrument for projection of global stability;
- Only a few European allies are capable to deploy along with the USA;

- Most European states are capable of only offering limited expeditionary capabilities to crisis-management operations;
- The NRF has been active world wide;
- EU-US technological capability gap still exists
- Capable, modular, flexible toolbox;
- Coalitions of willing and able.

Scoring on the characteristics scale	
Transatlantic link:	*strong*
US Leadership:.	*strong*
Area of Operations:	*global*
Decision-making:	effective but *coalitions of the willing*
Top down guidance:	*top-down, fairly effective (NRF is success)*
Spectrum of Missions:	*full spectrum military*
Capabilities:	*NATO effective; European capabilities are limited, mainly niche*
Political vs. Military nature of Alliance:	*mostly military*
Membership:	*no further enlargement*

3.3.2   Dispersed Toolbox NATO

Figure 3.16: Dispersed Tool box NATO

Combination of lukewarm US leadership in NATO, medium European cohesion and a strongly diverse perceived threat.

European and American perceptions of the security threat surrounding them have drifted apart ever further. Whereas the United States views the world predominantly in realist terms and focuses on military threats, its European allies, nurtured by enhanced political unity in the European Union, have developed a postmodern view of the world and have emphasized humanitarian, environmental and demographic issues in their security considerations. Finnacial capital has been mainly invested in low spectrum operations capabilities. As common political priorities prove increasingly difficult to set, NATO's position in the international political arena further erodes while the Alliance is weakened as a military entity. The capability gap has not been closed; rather a further diversification of capabilities has occurred. The cultural military differences are still strong. Preemption is not a favoured EU option. On the positive side, European member states have thus focused on the development of crisis response, humanitarian

relief and disaster aid capabilities and NATO now has a wider range of instruments at its disposal. In those cases where leaders on both sides of the Atlantic manage to agree on a common policy, NATO can therefore use the capabilities from its diverse toolbox. The operations conducted by the Alliance are world wide.

Summary
• European and US drift in their perceptions of the security environment;
• USA; sees the world through a realist prism and focuses on military threats;
• Europe; a postmodern view in which human and environmental security issues are higher on the agenda;
• The capability gap has not been closed
• EU Military Investments merely in low intensity capabilities;
• Diversification of instruments;
• Policy priorities are more and more difficult to set;
• NATO has a broad range of instruments at its disposal;
• NATO is a toolbox, but divergent political views stall the use of its instruments;
• World wide operations conducted.

Scoring on the characteristics scales	
Transatlantic link:	*weak, diluted*
US Leadership:	*Increasingly at par with European states*
Area of Operations:	*global*
Decision-making:	*difficult*
Top down guidance:	*ineffective*
Spectrum of Missions:	*broad*
Capabilities:	*diversified*
Political vs. Military nature of Alliance:	*strong political characteristics*
Membership:	*enlargement with EU states*

3.3.3 Shared Partnership NATO

Figure 3.17: Shared Partnership NATO

Combination of strong US leadership, a coherent/strong Europe and commonly perceived threats.

The European Union has made great strides towards enhanced political unity. Further political integration has resulted in greater coherence in the field of the European Security and Defense Policy. European states have developed methods of using their limited (possibly even higher) defense budgets to make substantial progress in transforming their militaries to potent expeditionary components. Moreover, the capability gap between the US and EU has been narrowed mainly as a result of efficiency measures – such as standardization of equipment and combination of air lift capacities. A more capable Europe is also pushing the United States to exert strong leadership within the Alliance. The European allies have accepted this leadership role as threat perceptions between Europeans and Americans are commonly defined. There is a common understanding on both sides of the Atlantic that true progress can only be achieved by projecting stability and peace through a genuine partnership. As strategic lift remains a limiting factor for European forces, a division of labour has been agreed upon in which European member states operating without US support carry out military operations predominantly at closer reach to Europe and in the lower ranges of the conflict spectrum. However, selected European military forces can and do operate alongside the US around the globe and in the higher ranges of the conflict spectrum while making use of established NATO procedures, assets and capabilities. The NRF has become a success-story and a true partnership within the Alliance on the basis of shared responsibility is the result.

Summary
- The EU and ESDP have become effective crisis-management instruments;
- European states have transformed their militaries to usable expeditionary components;
- The capability gap between the US and EU has been reduced;
- There is a common view of security threats;
- US leadership in NATO is accepted and promoted by European states;
- Division of tasks:
  o   European states without US: low-end, close range;
  o   European states with US: higher-end, global reach;
- Partnership with shared responsibility
- The NRF is a success.

Scoring on the characteristics scale

Transatlantic link:	*strong*
US Leadership:	*Increasingly at par with EU, major European states*
Area of Operations:	*global*
Decision-making:	*effective*
Top down guidance:	*limited, capability development through EU*
Spectrum of Missions:	*military, including high-end*
Capabilities:	*effective*
Political vs. Military nature of Alliance:	*military*
Membership:	*enlargement possible with EU states*

3.3.4 Return to ESDI NATO

Figure 3.18: Return to ESDI NATO

Combination of fairly coherent Europe, limited US leadership and modest common perceived threat

Increased political unity within the European Union has had a strong impact on the NATO alliance. A relatively successful European Security and Defence Policy has led to significant advances in giving shape to a coherent, more 'holistic' European crisis-management component, operating within the NRF framework while also capable of doing so without US support. The capability gap has not been closed and has perhaps even widened. European allies are mostly incapable of operating alongside the Americans in the medium- to high ranges of the conflict spectrum. Resultantly, US leadership in the Alliance has been waning. Fear of a structural transatlantic rift held the Allies from giving up on NATO altogether. The result is a persisting, albeit marginal level of American guidance and increased political debates within the NATO institutions. While the United States increasingly operates on a unilateral basis and does not participate in NATO operations, it has supported the operations undertaken by its European allies. Similarly, the European fear of a rift with the Americans has led to operations being undertaken under a NATO flag. Hence, much of the early plans for a European Security and Defense Identity (ESDI) have materialized. In this case, however, the European pillar of NATO is bearing most of NATO's weight.

An alternative direction in this scenario is that, as American leadership in NATO diminishes and European cohesion increases, European states prefer to use the EU as the main crisis-management instrument instead of NATO. Thereby crisis-management operations are performed through the Berlin + mechanism, making use of NATO planning assets and capabilities but performing operations with an EU flag.

Summary
- Increased political unity within the EU; strengthened ESDP has led to:
  o   coherent European crisis-management component;
  o   operating with or without US Support;
- The capability gap has not decreased. European allies are hardly able to operate along with the USA;
- USA leadership in NATO is limited:

- o Fear of real Atlantic split keeps two sides together;
- o Persisting, but marginal level of American guidance;
- US unilateralism, no US participation in NATO operations;
- US support for NATO operations by European allies.

- Option 1: Operations by EU member states with US support under   NATO flag;
- Option 2: Operations by EU member states under EU flag through the Berlin Plus mechanism.

Scoring on the characteristics scales

Transatlantic link: *weak*
US Leadership: *limited –minimal*
Area of Operations: *regional (European neighborhood)*
Decision-making: *ineffective*
Top down guidance: *ineffective, driven by ESDP*
Spectrum of Missions: *broad*
Capabilities: *effective expeditionary, but mainly EU-centric and limited*
Political vs. Military nature of Alliance: *strong political characteristics*
Membership: *enlargement with EU states*

3.3.5 The Old Boys' Lounge NATO
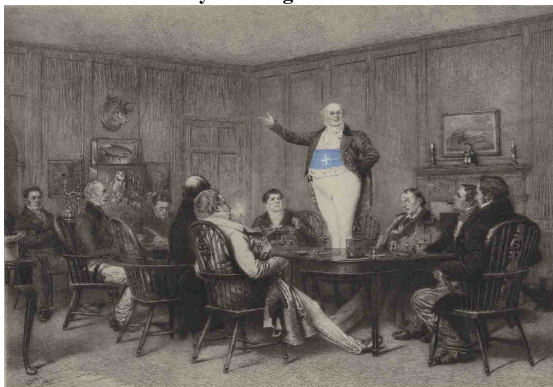
Figure 3.19: The Old Boys Lounge NATO

Combination of absence of US leadership in NATO, fragmented or cohesive Europe and either common or diverse threat perceptions.

The United States has started to lose its interest in the NATO alliance. The capability gap has increased and even the most American-focused allies have been unable to keep up with the American progress in the development of their armed forces. The NRF did not become the glue to keep the Alliance together. Defence budgets in Europe have continued to decrease or remained stable at best. Strategic security perceptions have started to shift and the two sides of the Atlantic no longer see each other as primary strategic partners. The European allies have

turned towards the European Union and ESDP for answers to security issues. Meanwhile the United States has embraced its preference for unilateralism, and is only occasionally moved to participate in an ad-hoc coalition of the willing. NATO is no longer the instrument for developing military capabilities and standardization. Although issues of global security are discussed, the resolve to act together is absent. Operations lack broad coalitions of able and willing EU forces and endurance of that Forces are and a bare minimum. NATO has become a political forum, reminiscent of a Gentleman's Society at the turn of the 19th Century rather than a collective security organization.

Summary
- European states and USA have drifted apart;
- Strategic security perceptions have changed;
- Atlantic relation no longer primary strategic partners;
- European focus on EU and ESDP;
- United States has embraced its preference for unilateralism;
- Capability gap has increased;
- The USA is losing its interest in NATO;
- Possible ad-hoc coalitions of the willing hardly sustainable during operations;
- NATO is no longer the instrument for developing military capabilities and standardization;
- NATO has become a purely political forum.

Scoring on the characteristics scales

Transatlantic link:	*weak*
US Leadership:	*absent*
Area of Operations:	*global*
Decision-making:	*only political forum*
Top down guidance:	*non-existent*
Spectrum of Missions:	*diffuse*
Capabilities:	*limited*
Political vs. Military nature of Alliance:	*only political*
Membership:	*significant enlargement*

3.4   Looking through the scenarios

To further illustrate the differences between the five alternative NATOs The next analysis that was done was the plotting of the Future NATOs on the scale of each of the characteristics from the consolidated matrix. The outcome is useful for a first appreciation of the place in the whole spectrum of each of the Future NATOs.

In the following figures the scores on the characteristics scales of the Future NATOs is plotted.
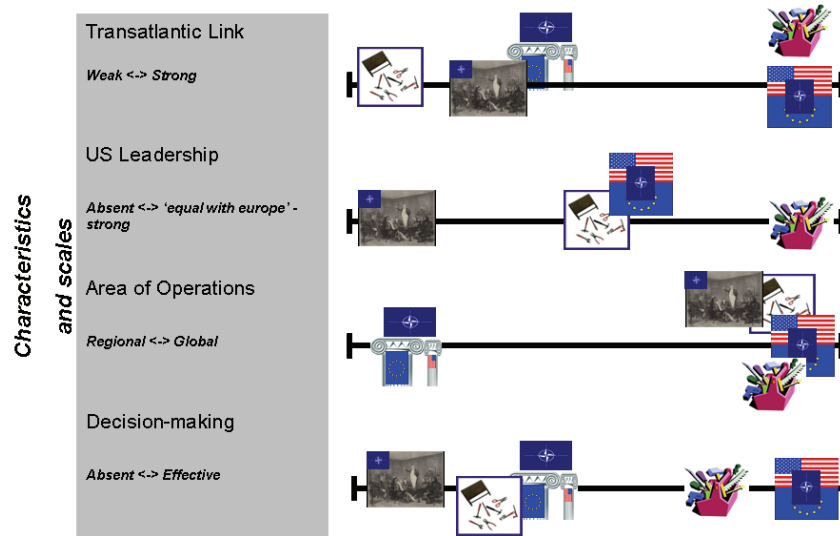
Figure3.20: Future NATOs (1) plotted on the scale of each characteristic from the consolidated matrix.
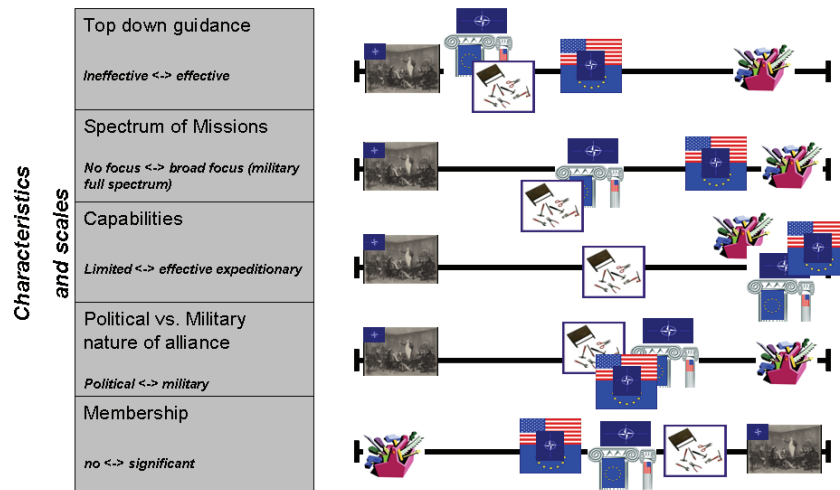
Figure 3.21: Future NATOs (2) plotted on the scale of each characteristic from the consolidated matrix.

This overview presents a number of interesting observations:

- Strong US leadership is thought to be a necessary and sufficient condition for close transatlantic ties; yet European co-leadership is also a possibility

- The strongest US leadership is likely to be found in *Strong Toolbox* and not in *Shared Partnership*;
- The Area of Operations is thought to be global in most Futures (even – theoretically, as operations would be merely verbal – in *Old Boys Lounge*). This means that expeditionary capabilities are crucial (see also the scale for capabilities). The only exception to this is *Return to ESDI*, where US relative absence leads to a more (Euro-centric) regional approach;
- Decision-making will, without US leadership, be weak in three of the five Futures;
- Top-down guidance is thought to only be possible through US hegemony;
- How high up the alliance moves in the mission spectrum is thought to be primarily driven by US leadership: only in those scenarios does the alliance go full-spectrum.
- Conversely, the scenarios with a more dominant Europe tend to be more 'holistic';
- The least favourable Future NATO is the Old Boys' Lounge

3.5   Conclusion

The result of the work done to establish Future NATOs resulted in five options for NATO that were used as part of the process of developing Future Worlds for the NATO LTRS process:

- Strong Toolbox NATO
- Dispersed Toolbox NATO
- Shared Partnership NATO
- Return to ESDI NATO
- The Old Boys' Lounge NATO, which seems the least favourable one.

4.   Future Worlds – Combining Future Security Environments with Future NATOs

The final step of this project was to combine the 4 retained future security environments with the 5 retained future NATOs.

	Shared Partnership $US\downarrow \leftrightarrow EU\uparrow$	Strong toolbox $US\uparrow \leftrightarrow EU\downarrow$	Dispersed toolbox $US\rightarrow \leftarrow EU\downarrow$	Return to ESDI $US\downarrow \leftrightarrow EU\uparrow$	Old Boys' Lounge $US\downarrow \leftrightarrow EU\downarrow$
White Dawn	$N^t \longleftarrow N^{t-1}$				
The New Caliphate		$N^t \longleftarrow$			N^{t-1}
Revenge of the Dragon			$N^t \longleftarrow N^{t-1}$		
The Emperor Has No Clothes	$N^{t-1} \longrightarrow$			N^t	

N^{t-1} – NATO that precipitates the security environment
N^t – NATO that 'fits' best with the security environment

In this matrix, we present the findings of the discussions within the project team about the type of NATO that is most likely to trigger a particular security environment (N^{t-1}) as well as the type of NATO that seems the best 'fit'[15] for that particular security environment (N^t).

1. **White Dawn - Shared Partnership NATO**
   - The starting point for this scenario would be the strong toolbox-NATO, which is probably the most apt characterization of NATO today (with a strong US that remains interested in NATO; a relatively weak European Union, and a perceived common threat)
   - After 'Black Dawn', and as part of the galvanization of the West's outreach, NATO has also developed in a much more potent and shared partnership between a more 'holistic' US and a more muscular EU.
2. **New Caliphate – Strong Toolbox NATO**
   - The New Caliphate scenario could really only emerge if NATO were asleep – if it would have deteriorated into an 'Old men's Lounge'

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[15] Please note that this is NOT the same as the most *desirable* NATO (which in virtually all cases would be a Shared Partnership NATO)

- In this security environment, the EU would be relatively more weakened by the emergence of the New Caliphate (as it is more dependent on energy; and more exposed to internal terrorism), but would still be contributing potent military capabilities to NATO. The United States would be engaged in the world to prevent the domination of the New caliphate and would be strongly interested in using whatever 'tools' (and bases) can still to be borrowed from NATO's 'strong toolbox' in light of the common shared threat)

3. **Revenge of the Dragon – Dispersed Toolbox NATO**
   - The trigger for this scenario might be a NATO in which the US has gradually lost interest as it turns its glance more and more westward to deal with the rise of China. It is more interested in beefing up its Asian Allies, than in prodding European Allies that tend to disagree with the US on the threat posed by a resurgent China. Since Europe would likely be more focused on the lingering isntabilities around its own borders, a Return to ESDI-NATO may have emerged
   - As the scenario takes hold, however, Europe becomes so weakened and the US so disinterested in NATO, that the 'dispersed toolbox-NATO' arises – one in which the toolbox is only still stocked by very few European force providers.

4. **The Emperor Has No Clothes – Return to ESDI**
   - This scenario might start out with a strong and balanced NATO that emerges out of the transfromational efforts of the beginning of this century. NEC is a great success and NATO (also the European Allies) goes strongly network-centric. It walks from success to success as its superior situational awareness coupled with a more 'holistic' appraoch to external action leads to historically unique both compellent and deterrent power.
   - After the revelation of unanticipated technological weaknesses, however, NATO changes. The United States returns to the drawing boards on information assurance, and is in the meanwhile extremely reluctant to jeopardize its troops by engaging in various types of missions 'of choice'. Europe is (somewhat) less affected by this evaporation of technological superiority and decides to go 'back to basics'. As it is still more exposed along its arc of instability, it has more incentives to remain active, also militarily, and to use whatever NATO-assets are still useful in the new security environment through the Berlin-Plus mechanism.

By combining future security environments and future NATOs in this way, the team also succeeded in using all the available future NATOs directly, with the single exception of the 'Old Boys' Lounge-NATO – the least useful one for requirements planning purposes anyway), which was only used indirectly (as the starting point for one of the Future Worlds).

5.   Conceivable Mission Types in the 4 Future Worlds

Looking at the list of mission types that were presented to the project team by NC3A the CCSS team feels confident that all of them can be accommodated in the four future worlds that were developed. The following matrix illustrates which ones could clearly be present in which 'future worlds'

Mission Type	White Dawn	New Caliphate	The Emperor Has No Clothes	Revenge of the Middle Kingdom
Collective Defence of NATO territory		V		V
Enforcement Operation – Counter State		V		V
Defence against Terrorism – Counter Terrorism		V	V	
Defence Of Economic Lines Of Communication	V		V	
Evacuation	V	V	V	V
Peace Making	V		V	

[To be worked out – will be in the final version presented on August 29: two-line descriptions of concrete scenarios in which NATO may be employed in each 'future world' for the mission types identified in this matrix]

6.   Four Future Worlds – Narratives

This section of the report presents the Future Worlds that have been described in more analytically in Chapter 4: Future Worlds – Combining Future Security Environments with Future NATOs in a more narrative way. In doing so, we have tried to insert enough elements of the future security environent in as playful and suggestive a way so as to stimulate the reader's imagination (and to push her to think out of the box), while at the same time not providing all of the elements of that environment with the aim of minimizing some of the pitfalls of such 'point scenarios' – also for planning purposes. The playful nature of these vignettes will also hopefully assist the reader in avoiding to think that these are 'predictions' or 'expected realities' – they are merely colourful story plots that are here presented for heuristic purposes.

6.1   Future World 1 - White Dawn

Editor's note –

And now for something totally different... It is not every day that *Nouveaux Riches* writes about world affairs. Very few high-ranking diplomats, policy-makers, humanitarians or generals are rich, and far fewer even of those few rich ones tend to be 'new money'. We would frankly be flabbergasted if more than a handful of them actually subscribed to our magazine. And yet there is something eternally fascinating about world politics and the people that drive it. Political power has always fascinated the monied classes – old AND new.

Our faithful readers will be pleased to see that this month's issue still has familiar rubrics about the lives of the rich and famous, exotic destinations (with a unique insider's view of the world's latest and ritziest beach resorts in the Gaza Strip and Georgia's Abkhazian coast), as well as this year's winners of our coveted NR-gadgets awards.

But the focus of this issue is international relations. For those readers who may have missed the past few decades lounging on various beaches in the South Pacific, we have asked Ludovic de Maupassant, director of the highly reputed IFRI (Institut Français des Relations Internationales) to provide us with a 'brief history of the XXI century'. We then have exclusive interviews about today's burning international topics with three unique individuals who HAVE struck gold in the aftermath of Black Dawn. The first one is Johannes van der Merwe from Johannesburg, CEO of one of the world's leading private military companies. Private military companies started being in high demand after Black Dawn. They tend to be smaller, more agile, more experienced with demand driven and tailor made

products and – oh horror of horrors – even cheaper (!!!!) than their government counterparts. Our second interlocutor is Marina Alekseeva, founder and CEO of *Hydrogen Lukoil*. As we all remember, the immediate period after Black Dawn witnessed an enormous rise in technological progress. Alekseeva was the leader of the Russian team that perfected hydrogen fuel which is now quickly becoming the world's leading energy source (this year, 2025, heralds the first year that half of all cars in the West & Asia are hydrogen cars). Last but not least, we also managed to catch Alessandro Missiroli, founder of *Networked for Peace*, the leading non-governmental organization fighting for worldwide stability.

This is a new and completely independent (from the UN) organization that has made a sky rocketing career. It is frequently called 'the "UN" of the New World'. Missiroli has developed a severe and terminal radiation-related form of cancer and has devoted the rest of his life to creating "a better world". This was an enormous drive that caused "the Armstrong-effect" (ed. perhaps you'll remember the famous cyclist Lance Armstrong who was extremely successful in the early years of the twenty first century after conquering cancer and founding the *Lance Armstrong Foundation)*.

So fasten your seat belts – we're off for NR's version of World Politics 101 'From Plato to SEATO'. And rest assured – we won't do this again anytime soon. We promise…

A Brief History of the 21st Century, by Ludovic de Maupassant

Looking back, Black Dawn was the best thing that could have happened to the world. It proved to be the trigger that pushed the West to get its act together'

and to finally start building the 'New World Order' that had been (mistakenly) heralded after the end of the Cold War. In the immediate post-Cold War era (in which two opposing ideologies – communism and capitalism – confronted each other in a world-wide 'cold war'), the United States on the one hand, and Canada and the European allies on the other were both reluctant to genuinely tackle the many structural problems that continued to bedevil the international system. The gradual build-up of gruesome terrorist attacks on the United States and its Allies in the first decade of the millennium pushed most Western countries to retrench behind their own borders with more stringent border control regimes (which even started affecting international economic intercourse) and more repressive domestic security regimes. International cooperation (even within the West) remained more ad-hoc than structural. Towards the end of the first decade of the millennium, these more inward-looking policies started being widely recognized as neither necessary nor sufficient. The terrorist attacks continued, and the West itself was increasingly becoming the victim of its own counter-terrorist policies.

Then came Black Dawn, the world's first twin 10-kiloton nuclear attacks on Washington, DC and Brussels, Belgium on New Year's Day 2009 that resulted in the loss of life of over a million people. The Black Dawn-attacks wreaked havoc in international markets, but they also galvanized the 'West' into genuine and quite radical policy changes. For the first time, the world saw effective coordination both within and between OECD countries; who started making better use of all the instruments of Western statecraft in failed and failing states. Not only were more resources made available for 'external action' (a combination of diplomatic, information, military and economic tools), but – much more importantly – the policies

themselves became more coherent and forward-looking. For the first time, for instance, both the US and the EU started building down the protectionist walls that had done so much damage in the world's 'non-connected' areas – not in the name of free trade or humanitarianism, but for the sake of self-preservation. International governance finally became more effective, partially because of some reinvigorated international institutions (including a rejuvenated NATO with a strong and mutually committed shared partnership between Europe and North America), but even more so because of more and better network-centric coordination between the capitals of the worlds.

Black Dawn also triggered major changes in the Muslim world, which witnessed a major backlash against this form of hyper-terrorism – both among the ummah and the ulema. A newly emerging younger Muslim elite – many of which had been educated in Western European schools – started a genuine inter-confessional dialogue with the world's other major religions.

As the root causes of terrorism were finally starting to be tackled, terrorist attacks started abating. Global Islamist terrorism continued, but at a much lower level – essentially fighting a rearguard battle, mostly in key states in the Arab world (Saudi, Egypt, Indonesia). But the rulers of these states managed to stay in power with the help of the rejuvenated West (NATO).

NR-reporter Philip Freriks meets our three interviewees in the penthouse suite of Hotel Bernini near Piazza Navona in Rome. A perfect place to meet the people who created "the New World Order".

Q: How did you/your company reach its current position?

Van der Merwe: " Because PMC's (ed. private military companies) are far more efficient. They're smaller and used to working in a demand driven market. This makes them more adaptable to change than institution-nalized military. Besides we don't have to worry about loyalties to national products, so we can use the best, most effective equipment for the job at hand. We don't have to report to a national parliament, so we can respond quicker and move faster. Finally, after Black Dawn, government and international organizations recognized our assets and now we are well in demand. Our position has changed from operating in the outskirts of the military market, in hazardous environments and war zones, to close cooperation with governments and international institutions at the heart of the security sector."

Alekseeva: "After black dawn, there was a boost in technological progress. This was partially triggered by the need to contain the nuclear contamination by the fall-out of the bombs (and the aversion to nuclear energy it generated), partially it was related to the policy to cut of Saudi-based terrorists from their money-sources by making oil dispensable. A major incentive has of course also been the need to safeguard China's environment from devastating pollution. Now that it has become a consumer society everyone drives a car and that adds up to a lot of cars. Circumstances and policy changes regarding energy sources (whether inspired by 'the war on terrorism' or environmental awareness) have made our expertise and products essential."

Missiroli: "The UN have become obsolete. Most people have lost faith in it. We are a new and independent organization that focuses on important issues of the day: health, environment, stability through fairly distributed wealth. We are purely humanitarian: for the more

military part there are organizations like NATO. We do cooperate with them. It is like a good marriage: we complement each other without getting in the others way. Of course it took us (ed. *Networked for Peace* & NATO) a while to get used to one another. Our strength is that we have members from all over the world, from all religions, ethnicities and nationalities. If you combine this on a need-to-cooperate basis with a clearly distinguishable military force like NATO you can get really good results."

Q: What was your first reaction after the events in 2009?

Van der Merwe: "On a personal note, I just wanted to get my girlfriend who was not with me in the US at that moment, thank God) and my family to a safer place. So we moved away from the zone of impact and most serious fall out. We sometimes consider moving back, but I think we'll wait a little longer. We quite like South-Africa, actually. I thought the world had come to an end in 2009, but I turned out to be wrong. When I realized what new opportunities lay ahead, I jumped right in. Due to radioactive radiation I can't have children, so I put all my energy into the business."

Alekseeva: "My first reaction was disbelief, immediately followed by the urge to help, to do something positive with the technology I'd been working on for years. There was a great need to contain contamination. Luckily we (ed. *Hydrogen Lukoil*) had been working on containment of highly explosive energy sources and could put our expertise to use. Of course the effects of the bombs on health and fertility of both flora and fauna have lead to an enormous increase in medical science, agricultural technologies etc. This is keeping everyone in the business sharp as

razors, what with competition and the speed of technological progress. As far as our company is concerned: thanks to the policy changes towards oil exploits and alternative energy sources we were able to finally reap the rewards of our hydrogen driven motors. Personally I was lucky to be stationed at a research facility in Tyumen (West Siberia), so we were in the safe zone this time."

Missiroli: "We were smack in the thick of it, in Brussels. I was just heading for the European quarter for a meeting. The things that happened are indescribable. Lots of family members and friends were killed or got seriously sick due to radiation. I thought 'this should never happen again' and 'please let us save our planet before it is too late'. I had been a lobbyist for years, so I knew the path that lay ahead if I wanted to really do something. I realized the institutions we had so far were not sufficient. Humanitarian organizations like *Médecins sans frontières, the Red Cross/Crescent* and UN 'daughters' like *UNICEF* need to work together more effectively. A worldwide network of organizations with one front-office for third parties who want assistance, inquiries, you name it. It was not a hard choice."

Q: Do you think the world has changed much?

Van der Merwe: "Oh yes! Attitudes towards conflict and its root causes have changed dramatically, for instance. We now realize that the causes for conflict are often created by our own selfishness, by our focus on ourselves instead of on the world around us. Another important change is the international institutional system: we now see a fairly effective system of multilateralism, a large part of which is ad hoc and bottom up: direct lines between people, organizations, states that need to work together.

Alekseeva: "Obviously, there is the rise of Asia to an equal footing with the West. People in Asia realized that the economic loss of power in the West could have devastating effects in Asia. While Europe was at the pits, Asia was a safe zone, unmolested: the 'new' centre for technological and economical power. But without Europe's market this power is meaningless. So Asia helped the West (with technology to contain radiation) similarly to the US helping Europe after WWII"

Missiroli: "Certainly, the world is becoming more balanced. Asia, the US and Europe are now almost equally strong. And in Africa things have changed as well. Now that Europe can not produce any agricultural products and was thereby forced to cut away its protectionist barriers, Africa has finally gotten its chance as an agricultural 'power'. This has improved Africa's position, but we must not forget that this is still a continent in transition from traditional states to modern democracies. Especially during transition periods, wealth can be fuel for conflict. So we still see conflicts, but prospects are better than 25 years ago. And as long as military organizations work well together with humanitarian organizations there is a good chance we'll all come out winners in the long run."

Q: Now, if we start to talk politics, how would you now judge the different

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international actors active in your field of expertise?

Van der Merwe: "Haha, that's a tricky question. I do have to consider the privacy of our clients, of course. But seriously, I think the US and the EU have done well in changing their outlook on the world *and* on how best to deal with it. It is wonderful that NATO has experienced a revival and has strengthened its position. Focus has shifted towards Africa as well. The African Union has grown stronger but should still not be compared to the EU when it comes to securing stability, fundamental rights, fairly distributed wealth. Other regions in the world that we should keep an eye on are, for instance, the Central Asia, the Saudic peninsula and the Persian Gulf. Our company has been active in the Persian Gulf for decades and I think we should not pull our hands off it yet. The close cooperation with NATO and local governments are steps in the right direction."

Alekseeva: "Oh, I think we are all on the right track. As long as we do not forget the vulnerabilities of leading forces in today's world of science and technology. Many parts of Asia have risen to a footing almost equal to the West in terms of economic power, technological advancement and wealth. The societies, however, have not changed as dramatically. This means that the distribution of the assembled wealth is not optimal for creating a stable atmosphere, that most countries do not enjoy the Western level of democracy. These are vulnerabilities that could become serious problems if neglected. I suppose ASEAN is doing what it can, but I think the Western powers should invest more in ensuring safeguards against unwelcome outbursts of violence and instability. I am but a simple scientist, but could there perhaps be a role here for *Networked for Peace* or NATO?

Missiroli: "If we go back to Burkina Faso in 2014 when, due to great agricultural exploit of the land and insufficient irrigation, the economy took a serious blow and a lot of people lost their livelihood. Fights broke out that threatened to become a civil war with spill-over effects on its neighboring countries. Humanitarian organizations associated with *Networked for Peace* intensified their presence and activities in the region and after consultations we (ed. *Networked for Peace*) asked Western governments for military support. This concluded in a successful cooperation with NATO. Tranquility has been restored and with the help of technological progress more efficient ways of agricultural production have been established. So I think the different international actors did quite well in this instance. We should keep up this way of working together, for there are more possible seats of fire in the world. Africa is still for a large part an fairly inhospitable place with plenty of barren spots, that will not flourish economically very soon. And there are other regions in the world where means of economical self-sufficiency are limited. The combination of lack of economical self-sufficiency with the lack of democracy can be explosive. We can expect similar outbursts of violence there as well."

Nouveaux Riches

6.2   Future World 2 – From the New Islamic Community to the New Caliphate

Language: English

LECTURE Contemporary Middle Eastern History, 2003- to present

Prof. Abdullah (Abdullah@uinjkt.ac.id)
September 1, 2025.

video: audio: script.
Integral text: summary: analysis: link to facts

Ladies and gentlemen,

Although some of you were not born then, I can vividly recall March 20, 2003, the day that the Crusaders led by the United States attacked Iraq ruled by Saddam Hussein. Subjected to the brunt of American military power, it took only 28 days for the regime of the dictator to fall. The successful invasion was concluded by worldwide coverage of an overjoyed Iraqi crowd in Baghdad toppling the statue of their hated tyrant. Turning points in history are not always immediately apparent, and I must admit that I and many others then did not realise the full implication of these events. It turned out, however, that the scene with the statue was framed by CNN – an American news channel – and that winning the peace turned out to be a lot more difficult than winning the war. Fortunately for us, the Americans do not have the proverb 'every sun has to set'. Their overwhelming military victory in 2003 illustrates that human organisations often radiate the greatest outward brilliance at a moment when inner decay is farthest advanced, like a star whose light shines most brightly on this world when in reality it has long since ceased to exist.

In this 30 minute lecture I shall give a short introduction to contemporary Middle Eastern History. I will highlight the role democracy and markets played in initiating the Islamic Revival that started in 2009. In a birds eye view I will continue with the geo-politics underpinning the New Islamic Community (NIC) that was set up in 2015 with the aim of stimulating and facilitating inter-Muslim trade. Since then, the NIC has developed into one of the worlds most powerful economic and military

alliances. We know it can and must not stop here, and I hope you will gain an understanding of the complex institutional challenges that must be overcome before the installation of a New Caliphate can become reality. After this lecture I am willing to answer any questions and discuss the prospects of Indonesia joining the Caliphate that is envisaged by many today.

The Fourth Gulf War

The third Gulf war in Iraq (2003) was to be the first stage in a grand strategy of the American Neo conservatives, whereby US influence was to be consolidated in the Middle East. It was clear from the start that the American style democracy that was imposed on Iraq was not going to work. Sometimes coined as the fourth Gulf war, the internal conflict began as a righteous struggle against the occupier, but unfortunately slowly evolved into a full scale civil war. Directly after the invasion fighters from Afghanistan and all neighbouring countries set for Iraq, and the Jihad turned into fratricide as Muslim brethren fought and killed each other on scale unprecedented since the first Gulf war in 1982. A host of terrorist organisations (not driven by National or Islamic institutions) copied, or acted in the name of, the Al Qaida organisation. I need not remind you of Bin Laden, who successfully bombed the symbol of Western decadence in 2001 but was martyred in Pakistan soon after. Suffering from the absence of a capable spiritual leader, the Qaida organisation fragmented further, and the myriad of affiliates did not just concentrate on Western targets in the West, but increasingly claimed Muslim lives in Muslim countries. Sharm El Sheikh, Karballa, Riyadh, Qom and Najaf: all were hit by terrorists. Although the situation is not analogous – and we must not forget the plight of the Muslims in Kosovo – the split of the Iraqi state into three autonomous regions can in some ways be compared to the disintegration of Yugoslavia. In Yugoslavia, the new independent states vied for membership of the European Union (EU), but not all could accede. In the Middle East, the New Islamic Community that began as an pan-Arab trade zone, eventually included all three new Iraqi states (the Shiite Republic of Iraq was the last of the three to join in 2016, together with Iran) as Muslim members, and aided in rebuilding the devastated battleground. Western military interference, their abuse of Islam, the terrorist attacks claiming thousands of innocent civilian lives in the Middle East – all caused widespread Muslim revulsion and formed a fertile breeding ground for the democratic movements and the joining of Islamic forces that was to occur. Keep this in mind, for I will come back to it later.

This leads me to two of the important themes of this lecture: democracy and markets. They are in many ways ironic themes, for pundits in the beginning of this century tended to associate Islam with despotism, economic incompetence and obscurantism. Even though these themes will feature more abundantly in future lectures, we need to touch upon their historical basis today.

Democracy

Although its concepts were first laid out by the ancient Greek polis, it was the first Caliph, Abu Bakr, may God be pleased with him, who is credited with the first version of just democracy. And I will read you a quote why Islam was the liberating religion for the weaker segments of society, including women, dispensing justice to the weak and powerful alike. Abu Bakr said: *"O people! Behold me – charged with the cares of Government, I am not the best among you; I need all your advice and all your help. If I do well, support me; if I mistake, correct me. In my sight, the powerful and weak are alike; and to both I wish to render justice. As I obey God and His Prophet obey me; and if I neglect the law of God and the Prophet, I have no more right to your obedience."* It is now difficult to

imagine, but at the beginning of this millennium it was the arrogant West who never ceased to lecture Islam about democracy. What they did not, and still do not comprehend, however, is that democracy is not morally absolute. Man is prone to sin, and the majority is more than often wrong. But the word of Allah (the Glorified and Exalted) is absolute and final, and without this check on democracy there can be no justice.

True Islamic democracy returned to the Middle East in 1979, when a popular Iranian revolution replaced the corrupt Shah with an Islamic Republic. Persian democracy, with universal suffrage for all those older than 16 years, was isolated by the world and not least by the rich hereditary kingdoms of the Gulf. In the initial years of the Islamic Republic its Arab neighbours were wary of the revolution it extolled, and in the years preceding the Islamic Revival, it was the Persian nuclear bomb that caused unease. Nonetheless, it would take exactly thirty years before democracy spread to its Arab neighbours.

And in 2009 it happened. King Abdullah bin Abdulaziz al-Saud Saudi Arabia died unexpectedly of lung cancer and after an intensive power struggle between his sons and cousins, the young and charismatic prince Faisal took power. He immediately reformed Saudi society, redistributed the wealth that was hoarded in the hands of the princes of the royal family, and cut ties with the corrupt West. In the elections he subsequently organised, he gained a majority of the vote for two consecutive terms in office. Like many great men he did not live to see the fruits of his labour, and was assassinated in 2016. His leadership, however, proved a tipping point for the Gulf State kingdoms that fell one by one like dominoes to popular revolutions or democratic coups. Leaders were again accountable to their people, Qu'ranic justice was dispensed to strong and weak alike, and brotherhood, charity and the Zakat became institutional policy.

In Egypt and Syria the secular dictatorships were also reformed, although more by evolution than revolution. Pressure from the public opinion, strengthened through the communications revolution of the 90's of the previous century, demanded justice and the vote. First in local and partial elections, and later in general elections, true Islamic parties were elected by overwhelming majority and took power.

Trade

Before coming to the subject of geopolitics, I will address the second theme that is of such crucial importance to the wellbeing of Islam: the market place. It is one of the ironies of history that the West, just as with democracy, was confident in imposing its own version of the market on Islamic countries. It eluded them that the Prophet (Peace be Upon Him), not only believed in markets, but that he himself made his living as a merchant, as did his wife Khadija. And together with the return of democracy in the Middle East, it is the reinvigoration of the market place that is responsible for the Islamic Revival.

In the previous century there were three factors responsible for the ailing economies of most Muslim countries. Firstly, corrupt and secular dictators or monarchs failed to construct an efficient infrastructure and financed only their family, elite and own power base. Secondly, not only did many Muslim countries shy away from inter-Islamic cooperation, but they also concentrated on forwarding their own national interests at the expense of other Islamic countries. Finally, the West, with its political, economic and military hegemony insisted on dividing and suppressing the development of

the Muslim world, imposing its own values on the Muslim masses in connivance with the corrupt regimes.

Around the middle of the first decade of this century the economic tide would start to turn. Energy hungry China and India signed billion dollar oil and gas deals, starting in Iran. The discrepancy between supply and demand for oil (there was a structural shortage of production capacity until the end of the decade) boosted the economic cooperation with Asian countries, and the economy grew at 6 % per annum with the high oil prices. The United States, abandoning the quagmire they had created in Iraq to concentrate on a perceived Chinese threat, resisted Chinese economic expansion into crucial Western markets. As a result, Chinese multinationals with much hard currency to invest, had to divert and were quick to discover the unique potential of Middle Eastern Countries: young and fast growing populations, a huge region that encompasses one language, and ample natural resources. Complementary to this investment boom, Egypt, followed by others, jump-started its own economy by investing in its transport infrastructure and information technology. As more genuine Islamic regimes came to power, terrorist attacks in Muslim countries subsided, wealth was redistributed and a fertile inter-Islamic trade climate was established.

The first bilateral trade agreement between Muslim countries was set up between Saudi Arabia and Egypt, in 2011, and other countries with Islamic regimes were quick to join. Subsequently, a pan Arab free trade zone spread like an oil stain through the Middle East, and in 2015 the New Islamic (Economic) Community was born. The institutionalisation of what was initially an Arab trade cooperation evolved into an truly Islamic community, when Iran and the Shiite Republic of Iraq (SRI) joined the NIC in 2016. By 2020, the NIC encompassed all Muslim countries from Algeria to Pakistan, save Turkey and Libya,. Next to the core NIC, Indonesia and our brethren in Bangladesh enjoy Preferred Muslim Market Status.

The synergy of the elected Islamic regimes, supported by the growing Muslim identity of their populations and the free movement of believers and goods, led to further cooperation on the crucial issue of defence. At the treaty of Cairo in 2018, all the members of the NIC unanimously agreed on the principle of collective security, and installed a new Combined Muslim Headquarters. With Chinese nanotechnology, and Russian metallurgy and optical engineers, a vibrant new arms industry was set up in Sudan and Yemen.

The Fall of the West

It goes without saying that trade cooperation in the Middle East, initially rhetorically encouraged by the West, was confronted with growing resistance when its enormous economic, political and even military potential became apparent. This, and the democratic revival in oil producing regimes, resulted in first Saudi Arabia and later all NIC countries placing quotas on oil export to the US, causing the price of oil to rise to 1000 renminbi per barrel. Since then, the West has decreased it reliance on oil and invested in renewable fuels and nuclear energy. After a peak in the early 10's, the demand and supply of oil started to decline, and oil revenues fell. However, trade diversification and free trade agreements in the Middle East cushioned the negative effects of diminishing oil profits, and we must not forget that the general public in these countries hardly benefited from the oil revenues anyway, as the corrupt regimes kept the money for themselves. Nonetheless we must now avoid a new

dependency on Western renewable energy technology, and Egyptian solar energy technology could become a vital economic asset for the NIC.

In 2007, Turkey and the European Union mutually postponed the idea of Turkish membership of the Union, and Turkey decided to chose her own path. After reluctantly experiencing the Islamic Revival, an Iraqi Kurdish State and the Iranian bomb in her back yard, Turkey acquired its own nuclear deterrent but wavered between the spiritual East and material West. American insistence and the interests of its military have still ensured NATO membership, despite the many Believers in Turkey who support an Islamic course. Turkey still formally identifies itself as a bridge between the cultures of East and West, but I can tell you, bridges face a bleak future when the land entities they connect are destined to move further apart.

Neighbouring Europe was beset by terrorist violence in the first decade, and saw its attempts at political integration falter as member countries continued to place national interests above community interests. The battle for subsidies between the previously poor southern countries and the ten new member states (who joined in 2004) intensified even as the opulent northern countries grew more reluctant to contribute any money at all. Politically divided and economically weak, the decadent EU could hardly find consensus on the Iranian bomb, and even less on the Iraqi civil war that directly followed. It was the establishment of the NIC in 2015 that probably saved the Euro currency from total collapse, and although more political integration is now again on the agenda, Europe has experienced two decades of introspect and political crises. The terrorist attacks in Amsterdam, Paris and Rome, and later the rising star of the NIC resulted in more and more intolerance and discrimination of the extensive Muslim Diaspora in all European cities. Many of the third generation immigrants, attracted by economic opportunities and pulled by the spiritual magnet of the Islamic Revival, decided to return home. Those who stayed have been forced to increasingly resist their oppression, and European capitals are again bracing themselves for the effects of their own abusive policies. In many ways, the West is now facing us on two different fronts: an external one and an internal one.

> After the turning point in 2003, the United States only experienced further decay. As with Vietnam, Lebanon and Somalia, the loss of life in Iraq finally precipitated the retreat of the hated occupier starting late 2008, as the democrats fulfilled their pre-election promise. Iran's nuclear progamme- that blossomed in 2009- enticed a typical crusader reaction: ineffective military airstrikes on nuclear installations. Within months, Iraq plummetted into a civil war that could only be brought to a halt by a concerted intervention by prince Faisal of Saudi Arabia, Iran, and Syria in early 2011. Around this time the stumbling US empire experienced a critical showdown on Taiwan with China, similar to the one in 1995. This distraction, that caused a serious military alert but was diplomatically resolved, perhaps contributed to the US non interventionist policy in the Middle East in the early 10's. The reformation of the House of Saud and the cascade of True Islamic regimes that came to power on a wave of popular support, apparently deterred the US from further military interference. As Europe deliberated on its own future and the US sought to remain the hegemon in the Pacific, the Muslim merchants began to connect the states in the Middle East. Although the NIC started as a purely economic cooperation, the distrusting West returned to its old custom of stirring up strife between Muslim brethren, as it attempted to prevent countries from joining. Libya, although less strategically situated than Turkey, has resisted its natural membership of the

NIC and the dictatoral secular regime has cultivated close ties with Europe and the US. But as we know, Allah the Almighty will not allow factionalism to succeed.

Finally, the issue of Palestine. To the reluctance of the Jews, Palestine was liberated and a new state was created. However, Zionist forces still oppose the right of return of millions of displaced peoples, and continue to effectively hinder the development of the new Palestinian state with their Iron curtain and their selfish water policies. The holy city of Jerusalem is still partly in Zionist hands and the wall restricts all movement. Although I have a strong view concerning this complex issue, as undoubtedly many of you have, we must remain controlled and pure in our beliefs and thoughts. Suffice to say, many feel now is the time to put an end to this enclave of stolen land in the midst of the Islamic heartland, an injustice that has been suffered for nearly 75 years. The 2023 Muslim campaign to recover the Golan Heights was successful, as our objectives were narrow and limited. It is clear however, that the United States and several European and NATO powers are going to be involved if there is a further escalation and if the objectives are broadened. It is also apparent that, with now the very existence of the remaining Jewish lands at stake, a nuclear drama must be avoided.

To sum up this first introduction, I hope I have managed to sketch some of the most important developments that have occurred in the Middle East over the past 25 years. Crucial themes have been democracy and trade, and how the Islamic Revival began in the Middle East. Although the United States still posses a formidable military might, we must realize that it is following the example of the Soviet Union and other fallen empires: its huge military expenditures can no longer be supported by an eroded economic base. The United States can collapse suddenly, or they can fall fighting: great military powers in their death throes tend to lash out unexpectedly. We must be prepared for all eventualities. The future is unpredictable, but we can only have faith in the will of Allah the Almighty. I sincerely hope the NIC countries really do succeed in surmounting nationalist sentiments and create a Caliphate. And for us- the big question is of course which path Indonesia will chose: the Chinese co-operation Sphere, full NIC membership or, if we really manage to unite, the Caliphate.

I hope this afternoon's lecture on contemporary Asian History will not just highlight the material aspect of the possibilities ahead!   In the words of Almighty Allah: "So lose no heart, nor fall into despair. For ye must gain mastery if ye are true in faith".

Since 1 January 2024 the text of questions and discussions are no longer available on Internet to stimulate lecture attendance. To obtain a digital version of the ensuing discussion concerning Islam and nuclear deterrence, Islam and the environment and the New Caliphate movement, please contact prof Abdullah.

Chronology

2003   Invasion of Iraq by coalition of the willing

2004-2008 Insurgency and Sunni Shiite violence in Iraqi heartland

2004   First billion dollar oil and gas contracts between Iran and China and India

2007   Turkey and EU postpone EU membership talks

         First signs of Egyptian 'economic miracle'

2008   US Democrats to power, start of withdrawal of troops from Iraq

2009   Iranian nuclear installations bombed, start of Iraqi Civil war

         Prince Faisal comes to power in Saudi Arabia and redistributes wealth

2010   Islamic parties come to power in Syria, Bahrain and the Emirates

2011   Bilateral trade agreement Egypt and Saudi Arabia

         Formal recognition of three independent Iraqi states, end to all fighting in Iraq

2012   US/China Taiwan crisis

2013   Algeria, Tunisia, Syria, and Gulf States join Islamic economic cooperation zone

2014   Palestine freed

2015   Creation of New Islamic Community (NIC)

2016   Iran and SRI join NIC

2018   Treaty of Cairo, members of NIC create joint military headquarters

2019   Turkey acquires nuclear deterrent

2022   Libya holds military exercises with NATO

2023   Limited campaign by New Islamic Community to re-conquer Golan Heights.

6.3   Future World 3 – Revenge of the Dragon

FUTURE HISTORY 2005 – 2025

The period 2005-2025 was characterized by a steady rise of China (and its adjacent markets) as a regional and global economic power. While the Chinese leadership was able, through a strict monetary and import policy, to sustain an average of 4,5% growth until 2015, the US had little choice but to adapt its slowing economy to the new Asian standards. The Bush administration (2000-2008) and its republican successors grew increasingly isolated within the international community, due to their unilateral outlook and their exclusive focus on the war on terror. The short 4-year intermezzo by US democrats in the White House thereafter did not make a significant difference. In addition, American allies overseas chose for a more neutral stand over the years; with a turning point in 2013 when Saudi Arabia started reorienting their international policies towards China. As a consequence, US influence in crucial locations suffered in the following decade. By 2025, the new Liberal Party is in power, preoccupied with keeping a dominant China at political bay. With China setting the rules of the globalisation game, political resentment against the "West" decreased significantly. The so-called "Terrorism Decade" 2001- 2009 features in Asian schoolbooks as the starting point of an Asian century.

Despite predictions to the contrary at the time, China did follow a well-balanced strategy in the first decade of the millennium. The country managed to create a stable economic environment through well-orchestrated trade regimes with its neighbours and investment schemes guaranteeing a global reach for its products. Whereas political conflicts in China's Western Xinjiang province and India's borders persist, the national leadership has maintained a tight grip on the unity of the country. China's military might reached a significant level in 2016, when the Chinese submarine fleet outnumbered the US in the Pacific. Massive investments in sophisticated military technology in the field of Command, Control and Communications and the use of space added to its leverage. In terms of security alliances, China had been at the centre of attention since 2008. Despite active containment policies by its South East Asian neighbours, China successfully expanded the Shanghai Cooperation Organisation (SCO) into the Shanghai Cooperation Alliance (SCA), based on numerous bilateral security guarantees across East, Central and Southern Asia. In 2020, India joined the SCO after a 6-year period as observer. NATO member states diversified their security alliances over time, partaking in SCA and UN operations abroad; as a result, some experts speak about NATO as the "Washington Pact" in reference to the decreasing coherence within the Warsaw Pact after 1990. The Taiwan issue, the key dilemma in US-China relations until 2009, resolved rather unexpectedly. When a disastrous earthquake hit Taipeh in 2009, Taiwan requested China's assistance in order to maintain order and rebuild crucial parts of the infrastructure. Financial markets collapsed in the region – including Japan's economy – and only recovered after a joint Chinese-Taiwanese effort. Japan had difficulties to boost its economy back to 2008 levels and finds it increasingly hard in 2025 to contain China's rise. The catastrophe helped to bring about what has in 2017 been declared the autonomous province of Taiwan. The European Union, once one of the major markets for the Chinese economy, has become a middleweight in international trade. Predominantly occupied with her political enlargement and the internal commitments deriving from it, the union booked limited success over the years in designing a joint foreign policy. The accession of Turkey in 2019 has not made it easier to streamline external representation. Political and economic reform all throughout the union suffered as a consequence. A massive work force of young Asians, Africans and Arabs keep the union's economy running, however it proved hard for the EU market to make its industrial sectors adapt to the China-oriented service delivery. Whereas the introduction of the automated translation devices (ATD's) in 2016 has helped enormously to internationalise all business sectors, EU education generally lacks behind the needs of the current markets. Social security policies also remain a major problem, as the union is still dependent on its alien workers to pay for its elderly.

Oil prices developed as most experts had foreseen in 2008, showing a steady increase due to growing demand. Little changed since 2006: the US still relies on major deliveries from Canada and Mexico, while

International Spill-Over? The Dangerous Waters in the PRS

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Asia secured crucial assets in Africa, Russia and the Caspian Sea. Chinese energy strategies set out in the early 10's however, proved rather effective and managed to lower the country's dependency on crude oil by introducing clean coal and hydrogen power systems. Furthermore, China introduced strict water consumption policies in 2018.

TIME LINE 2005 – 2025

2006 EU lifts arms embargo against China, under US protest

2008 Republican candidate again wins the presidential elections in the US

2008 China succeeds in transforming the Shanghai Cooperation Organisation (SCO) into a full-fledged security alliance (SCA)

2009 A major earthquake hits Taipeh, leaving major parts of infrastructure destroyed

2009 – 2010 International Terrorism gradually leaves the front pages

2011 Southern Sudan votes for independence in referendum; "New Sudan" internationally accepted

2011 Iran tests its first nuclear bomb

2011 Starting with major food shortages in several regions, India's democratic leadership faces strong opposition

2012 Democratic candidate wins the presidential elections in the US – short "blue" intermezzo only to last one term until 2016

2012 Major effort to decide on new UN Security Council Structure; gradual expansion decided with year-long transition periods

2013 Tensions rise in Sudan, opposition turns violent

2013 Saudi Arabia cuts major deal with China on bilateral trade agreements; similar arrangements include Brazil and Iran

2014 After years of state sponsorship, China becomes world leader in hydrogen transportation technology

2014 India joins SCA as observer, in a bid to prevent further loss of influence in the region

2014 SCA-NATO military intervention in Sudan to stabilise the border between New Sudan and Sudan

2016 IISS Report states Chinese submarine levels outnumber US in the Pacific

2016 – 2020 Introduction of Automated Translation Devices (ATD's) in international business prove a huge success (comparable to e-mail in the mid-1990's taking over business communication)

NATO UNCLASSIFIED

2017 China announces an autonomous status for Taipeh within the People's Republic of China

2017 Sudan renamed "People's Republic of Sudan" (PRS), with an autonomous South

2018 China introduces strict water consumption policies

2019 Turkey becomes part of the European Union

2019 The new liberal Russian leadership announces joint venture with Chinese company to exploit oil in Siberia

2019 Sudan builds Tueshwa dam along the Nile, cutting 5% of Egypt's fresh water resources

2020 India joins SCA as a full member

2020 New US Liberal Party wins presidential elections

2020 Thanks to Chinese backing, Sudan avoids a UNWA resolution against the Tueshwa dam

2022 Water crisis in Algeria. Libya and EU involved as mediators

2023 SE-Asian Security Dialogue held in Jakarta; discusses the region's relationship with China

2025 Sudan parliament approves development scheme for second Nile dam

POSSIBLE NATO MISSIONS

There are two major elements in this scenario: increasing water scarcity and a China-centred Asia. The underlying assumption is that China's chance for political dominance in such a future world prerequisites a gradual rise, by successfully diverting active containment policies from the US and China's neighbours. NATO's influence could then decrease over the years, with an internationally less ambitious America focussing on bilateral security arrangements. NATO representing a "dispersed toolbox" in this increasingly bipolar environment, the organisation would unlikely be able to unite member states in major operations. Rather, possible NATO missions would include:

1) preventive intervention (Macedonia concept) in intra-state and international water crises; humanitarian interventions

2) provision of NATO assets through member states to UN and ad-hoc coalitions (enforcement operations)

3) evacuation operations for NATO member states' citizens

4) collective defence of NATO territory

International Spill-Over? The Dangerous Waters in the PRS

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The following draft report of the "International Peace Group" is a telling example of the increasing need to manage water resources worldwide in 2025. It provides a background analysis of the looming crisis in Sudan and how the situation in 2025 is embedded in the political power play between China and US. You are reading a re-edited version with comments from the director of the Peace Group (Thailand's former Minister of Foreign Affairs). NOTE: Crossed-out paragraphs might prove interesting to the reader.

Related Peace Group Reports:
"NATO and its complementary Role in the Pacific"

Peace Group Pacific Report N°109, 7 May 2025.
www.peacegroup.org
"How to bully a dragon? Minutes from the South East

Asian Security Dialogue in Jakarta"

Peace Group Pacific Report N°110, 20 December 2024.
www.peacegroup.org

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International Peace Group
WORKING TO CREATE
PEACE WORLDWIDE

North Africa Backgrounder N°89   **12 October 2025**

INTERNATIONAL SPILL-OVER? THE DANGEROUS WATERS OF THE PEOPLE'S REPUBLIC OF SUDAN (PRS)

OVERVIEW

Sudan's promising rise to the class of middle-income countries has long been regarded as an outstanding example for African recovery. Domestic oil revenues and its central location between East Africa and the Arab Peninsula have created a stable base for the Sudanese economy with an increasing per capita income and a powerful business elite in Khartoum. But the economic change comes at a price. The national leadership faces popular opposition to its recent decision not to build a second major Nile dam. Sudan's agricultural and chemical industry along the world longest river are keen to exploit the existing water resources flowing along their lands, and have a hard time respecting the government's decision to give in to China's pressure. In a bid not to offend Egypt and its US patrons, China is willing to compensate Sudan for the occurring losses. Yet, the people of Sudan feel that this is not a sustainable option for the future development of the country. More comprehensive, and therefore regional measures should be considered in order to prevent the national crisis to spill over into the region and cause international tensions.

This backgrounder introduces Sudan's current water management in the light of the country's international standing and introduces some key dilemma's for the parties involved. It analyses the wider political implications of the diplomatic standoff and highlights possible contributions by external actors.

6.3.1.1.1 SUDAN'S DEVELOPMENT REVISITED

Sudan's oil had always been a potential source of income generation; however only with China's direct intervention in 2014 there have been significant benefits for the people of Sudan. Before 2014, chances for substantial recovery were slim: the 2011 referendum in favour of Southern Sudan's

independence came after a rather cumbersome transition period of six years, with major differences still unresolved between the North and the South. South Sudan became independent as "New Sudan", despite major concerns within the international community. However, with the UN at the time embroiled in a major in-fight about the altered UN Security Council structure, it had neither capacity nor leverage on the parties to turn the tide.

With Northern Sudan's access to international waters and New Sudan's control over the Nile, the mutual inter-dependency soon became evident and led to several political impasses in the first years of New Sudan's existence. With tensions rising in 2013, China saw its investments endangered. The Chinese National Petroleum Corporation (CNPC) had been in the country already since 2004 as part of an effort to diversify its international oil supplies. China's early focus on the northern Sudan changed over time and the company expanded southwards. When political tensions between the two Sudan's grew and turned violent in the east, China brought the issue before the standing committee of the Shanghai Cooperation Alliance. China pushed for a UN Security Council Resolution and stepped in by sending a combined SCA/NATO peacekeeping force in 2014.[16] Oil production was secured and China brokered a new agreement between Sudan's split elite: In 2017, Southern Sudan became an autonomous province with far-reaching guarantees for self-governance. The official name of the country changed into "People's Republic of Sudan" (PRS).

As a quasi-protectorate of China, PRS and its industrial development along the Nile took a sharp upward turn. From a gross domestic product of merely 300 billion PLEASE DON'T USE US DOLLARS, USE RB AS IN THE ORIGINAL ASIA

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[16] This operation was carried out with troop contributions from the Shanghai Cooperation Alliance and NATO countries. The latter included Romania, Turkey and Poland.

International Spill-Over? The Dangerous Waters in the PRS

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RELEASE. AFTER ALL, NO ONE COUNTS IN US DOLLARS ANYMORE in 2013, Sudan managed an economic growth rate of averagely 2,5%. Even though the thriving informal sector does not allow for correct estimates, the overall GDP in 2024 is valued at least US$400 billion. The current leadership in Khartoum vows to further increase annual production, in particular regarding the (petro-) chemical industry and sugar production. Both industries however are largely dependent on the Nile waters for cooling and irrigation. Recent development schemes have therefore suggested several measures to secure sufficient water levels in the area. As most feasibility studies into possible transportation schemes from the Red Sea to the various areas in Sudan were dismissed as unprofitable, the most prominent option emerged to be a second dam along the White Nile, some 400 kilometres south of Khartoum. Such a dam would be the second large-scale infrastructural project tabbing the waters from the Nile. The political dilemma behind this planning process lies in the fact that for one, downstream Egypt had never been consulted.[17] Neither did PRS's ministry of industrial planning consider possible consequences for any downstream regions. A second reason for diplomatic concern is that this is not the first time Egypt is confronted with unilateral action from Sudan: The Tueshwa dam 250 kilometres north of the capital, built in 2019, already cuts 5% from Egypt's Nile water resources and seriously upset the pro-US leadership in Cairo. Backed by China in the Security Council, Sudan managed to avoid a critical resolution drafted by UNWA (the United Nations Water Agency)[18] in 2020. Diplomatic relations between the two countries never fully recovered; with Cairo still deeply concerned about their dwindling fresh water resources.

For most analysts, Sudan's economic development is as surprising as it is dependent on the Nile river system. With a strong leadership and a strict development scheme for the core region of the

country, GDP has risen to unprecedented standards and brought enormous improvements for large parts of the population in terms of public services. The availability of sufficient water resources however, has always remained a major problem. In addition, Sudan's eastern provinces have to deal with the dire consequences of desertification.[19] With little option but to concentrate on the existing infrastructure along the Nile waters, Sudan's government might soon be caught between a rock and a hard place.

As external intervention already helped in earlier days, outside assistance might again be the only option for sustaining Sudan's young industry without causing major political backlash between China and US-proxy Egypt. Given Sudan's importance as an oil-producing country, potential tensions could open the door for further deterioration of trans-pacific relations.

PRS AND THE GLOBAL ENERGY MARKET

During the early 10's, it did not look like Sudan could emerge as a major exporter for crude oil. With China's determined patronage since 2014 however,[20] the country's leadership showed recommendable commitment towards the development of a domestic petrochemical industry. While other oil-producing countries' export levels stagnated due to a gradual diversification within the global energy market from 2008 onwards, Sudan was able to boost its share in oil production from 2% in 2014 to 4% in 2023. These developments notwithstanding, China is in charge. Even though in 2024, Sudan was good for 7% of China's gross oil consumption, it does not give enough leverage to Sudan's government to make China pay more for it, as China's energy supplies do not rely solely on oil imports anymore.

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[17] Interview with Senior Asian diplomat in Cairo, 9 October 2025.

[18] In 2015, the UN-Water inter-agency mechanism was transformed into UNWA, in response to developments in the Middle East: major water shortages in Jordan in 2014 had led to political tensions between Amman and Damascus.

[19] Whereas Sudan has been very active in developing appropriate re-settlement strategies since the signing the Anti-Desertification Protocol in 2017, the global climate change has left major parts of the country inhabitable.

(PLEASE ELABORATE ON MORE EXAMPLES SUCH AS ALGERIA, KAZAKHSTAN AND CHINA)

[20] In fact, Sudan's strategic interest in Sudan started during the last years of the Sudanese Civil War 1983-2005, when a weapons-for-trade regime was established by China in favour of the North.

International Spill-Over? The Dangerous Waters in the PRS

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Sudan currently sells its oil for an estimated 5% below market value to China.[21]

As mentioned before, China thanks its unchallenged rise to superpower status to a well-designed grand strategy on energy resources. First, China was able to introduce key technological innovations such as clean coal energy production and hydrogen transportation systems. Second, the Chinese leadership kept a clear focus on strategic oil assets in key regions of the world. Through economic incentives and bilateral security agreements, China continues to have various major oil producers delivering crude oil as part of preferred trade agreements with China.[22] Finally, China recently finished the necessary renovations at its oldest nuclear power station in Qinshan, putting the number of active plants back to 51 after a 3-year upgrading effort. Its bilateral agreements with India for nuclear energy also contribute to the great range of fallback options for China's energy-intensive economy.

On a global scale, China's energy demands (and the military capacity to secure them) have clear implications. On the one hand, it provides an economic balance between Asia and the rest of the world in terms of crude oil sales. In contrast to the first decade of the millennium, supply and demand spreads well across the continents, with the notable exception of Central America and Central Africa. On the other hand, it gives political weight to the Asian-dominated world markets, with Europe and America having become price-takers on the energy market.

US-CHINA RELATIONS AND THE IMPACT ON THE REGION

The Chinese leadership is keen not to endanger its influence in North Africa. With Egypt's current government showing an increasingly pro-American attitude,[23] Chinese policy makers have good reasons to keep an eye on the region. Whereas Sudan is a key supplier to China's substantial oil demands, the country thanks the (little, yet increasing) attention devoted to its recent water management issues mainly to its proxy function for Chinese political interests. For China, the PRS is not only an excellent example of successful Chinese patronage; an economically strong Sudan also has symbolical value seen the poor economic performance of its US-ally neighbour. Still, China must be careful not to fuel water-related tensions, as open hostility would seriously endanger the stability in the region.

The US on its part supports Egypt's claims for the Nile waters but has little choice but to limit itself to diplomatic means towards Sudan and China. Since a China-centred Asia dominates today's world markets, the US, like the rest of the formerly dominant West, has to deal with the consequences. Political influence decreased because of the growing economic dependence on the greater Chinese market; the US, Canada, EU and even Japan had to acknowledge the new rules of the game. The influence of the G8 as the world's economic elite diminished, and Asian markets increasingly set the agenda for WTO and G77 meetings. The latter resulted in a substantial rise of south-south trade during the mid 10's; however, trade and investment levels stagnated due to the generally poor state of the world economy from 2017 onwards.

As a result of these developments, the US over time took a more defensive stand in terms of economic expansion, and, more recently, in terms of military ambitions. The most significant indication for America's restraint in world politics concerns Iran. When Iran tested its nuclear bomb in 2011, the American government had to quietly acknowledge that diplomatic pressure from US side had proved irrelevant. Some analysts argue that today's America finds itself reminded of the situation facing the former Soviet Union before the end of the Cold War in 1989. Still, neither the military nor the economic might of the United States should be underestimated. The current dilemma in Sudan could therefore easily lead to a more serious crisis between US and China played out by proxy.

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[21] Official figures are not available as China's Energy Media Act prohibits any publication of sensitive information regarding energy supplies.

[22] China's most important oil providers include Iran, Russia, Sudan, Venezuela and Kazakhstan. Russia also accounts for 20% of China's gas supplies.

[23] Given its history as an American ally, Egypt went through a diplomatic change when American support within the government

decreased between 2009 and 2017, partly due to public resentment towards America at the time. 2017 onwards, US-Egypt relations recovered and took an upturn in recent years.

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I RECOMMEND NOT TO USE THE TITLE "TOWARDS A WASHINGTON PACT" IN THIS REPORT. WE WILL PREPARE A FULL REPORT WITH THIS TITLE NEXT MONTH.

MORE THAN BYSTANDER? THE ROLE OF THE EU

The European Union has long passed the peak of its political influence in Africa and might at first sight not seem to be the best party to broker between Sudan and Egypt. While the southern part of the Mediterranean Sea has increasingly become part of the EU trading zone, African countries farther afield fall beyond the direct reach of the EU. In the case of Sudan, the main reason lies in China's strong foreign policy agenda in the region. Yet, the EU might be well-positioned to mediate between Egypt (as a member state of the Mediterranean trading zone) and China's protégé. In order to do so, EU diplomats could work closely with Libyan officials, as done in 2022.[24] While the EU has little political weight due to its internal differences, its Foreign Service personnel is widely respected as a trustworthy mediators.

The same accounts for EU-China relations. The European Union had taken an early start in her passive attitude towards China by accepting China's gradual rise through trade. Already in 2004, the EU had a rather pragmatic approach towards the Chinese mainland, which at the time created serious tensions between the US and Europe because of the EU decision to lift a contentious arms embargo in 2006.[25] For a decade, the European strategy had paid off – pushing an ailing European economy and creating jobs at home while free-riding on China's

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[24] In 2022, Libyan and EU diplomats established a UN-mandated working group to resolve the water crisis in Algeria.

[25] At the time, China's human rights record and military expenditures were at the core of the debate. Despite China's guarantees to change its human rights policies in exchange for the EU lifting the arms embargo, substantial progress was never confirmed beyond reasonable doubt. Most organisations that were involved in these investigations in 2008 and thereafter today face strict controls by the Chinese government.

economic success. After R&D facilities, ICT development and university education had moved to East and Southern Asia however, the European economy had a hard time adapting to the new circumstances. In addition, the lack of substantial reforms in the Western parts of Europe in the mid 10's combined with huge costs for the eastern enlargement and a sharp decrease in foreign direct investment left an expensive European labour market with no other option but to refocus major parts of the economy. Yet, it would be unfair to paint an entirely sorrow picture of the European Union today. Given the shear size of the European Union, the international economy cannot afford to neglect European interests. This assumption however, does hold for the political weight the union has over the rest of the world.

As a consequence, the European Union has to acknowledge its limited leverage and should instead use its neutral reputation to facilitate a dialogue between the Sudan and Egypt. This could take shape, as mentioned above, by cooperating with Libya or through its more SCA-oriented EU member states such as Turkey or Poland. Either option should be discussed with Chinese diplomats in Brussels. Also, the EU embassy in Beijing should coordinate any mediation effort with the Chinese Ministry for Resource Management.

PREVENTING A REGIONAL WATER CRISIS

In order to ensure a peaceful resolution to the current tensions in the PRS, the international community cannot afford to stand idle. It is high time yet not too late to intervene in what could turn out to be a major political impasse. Several options lie on the table, however cautious diplomacy is needed.

Thus far, policy-makers on both sides of the Pacific have shown little interest to get actively involved in the looming crisis in the People's Republic of Sudan. One major reason for this attitude certainly lies in the significant drop in regional conflicts. While recommendable as such, this report argues that further neglect of the situation in Sudan is a potentially dangerous strategy; both China and the US should be very careful not to exploit economic allies for their individual political purposes.

While diplomatic efforts should include the neutral stand of the European Union, the SCA could, in addition, opt for the establishment of a security committee in order to prevent further

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Deleted: The US-China relations aside, the Sudan issue has serious implications for the trans-Atlantic community, too. With the SCA dominating the UN Security Council agenda, NATO's standing as a security organisation continues to be called into question. For the organisation, the most troubling development still is a growing trend of its own member states to diversify bilateral loyalties across Central and East Asia.

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tensions on water management in the North African region. Even though such a move would be considered politically inappropriate by the US, NATO could, in terms of a compromise, be represented in such a committee by non-American members states.

RECOMMENDATIONS:

To China:
- Set up a SCA water management committee for Sudan with a mandate to monitor developments and to engage with relevant stakeholders to discuss alternative water management strategies;

- Sustain efforts to facilitate dialogue by Sudanese diplomats with Cairo, through political pressure if necessary.

To the European Union:
- Use its impartial reputation in Northern Africa to mediate between Egypt and Sudan. Libya's diplomatic service has extensive experience with water management issues and should be included in such an effort. The large Egyptian business Diaspora in Poland, Germany and UK could also play a useful role;

- Get actively involved in a possible setting up of a SCA water management committee, with Turkish or Polish diplomats in Beijing as potential candidates for representing the union. With Poland and Turkey as influential NATO member states, this would also strengthen the NATO-SCA cooperation.

To the US:
- Accept European NATO member states to join such a SCA committee on water management;

- Work closely with EU officials to establish more direct communication lines between Egypt and Sudan.

THIS IS IRRELEVANT. SUDAN CAN DO LITTLE

WITHOUT CHINA'S APPROVAL.

ALSO, ALL INFLUENTIAL SUB-

GOVERNMENTAL ORGANISATIONS IN EGYPT

HAD THEIR OUTSOURCING CONTRACTS

WITHDRAWN BY THE EGYPTIAN

GOVERNMENT IN DECEMBER 2024.

To the Egyptian Government:
Engage with EU diplomats in Cairo in order to restart dialogue with Khartoum.
TOO SENISITIVE. WE WILL MAKE THIS RECOMMENDATION THROUGH OUR OFFICE IN NEW DEHLI BEHIND CLOSED DOORS. NOT TO BE PUBLISHED IN THIS REPORT.

To the UN Security Council / UNWA:
- Coordinate appropriate resolution strategies with the SCA committee. If such a committee is *not* to be established, work through the Security Council to maintain dialogue on alternative water management schemes for North Africa;

- Use the UN Lessons Learned Department to make best use of the resolution strategies of the 2022 Algeria water crisis.

Note: This report has been translated from mandarin. For the original version please go to: www.peacegroup.org

Deleted: President Al Mefadha should cease the opportunity of the upcoming trade delegation visiting India to establish more business connections with Sino-Indian cross-border ventures.

Deleted: To the Government of Sudan: ¶
Improve diplomatic relationships with Cairo and open additional public diplomacy channels through civil society and sub-government groupings. ¶

International Spill-Over? The Dangerous Waters in the PRS

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MAP OF SUDAN

6.4 Future World 4 – The Emperor Has No Clothes (A Milblog Memoir)

The reader will kindly forgive any tendency to rough language or behavior on the part of the site owner.
"Good people sleep peaceably in their beds at night only because rough men stand ready to do violence on their behalf."

These are the memoirs of a father and son known by the handle Greyhawk[26]. They chronicle about 20 years in military service in the finest Armed Forces that ever existed on this planet (and then some). They are extracted from the blogs my father and I posted on the net off and on over these past years. I realize milblogs are very passé these days, but for me they still capture the giddy and glorious days of my youth. For those who are no longer familiar with the term: milblogs – short for "military blogs" – were online journals run by active duty military or reservists who returned to civilian life. They were quite popular (and still tolerated by the Pentagon) in the first decade of this century[27]. The selected entries from our milblogs illustrate the enormous changes that have occurred in these past decades from the point of view of the simple soldier who has had to endure the constant change dreamed up by some supposed whiz-kids in fancy offices in DC and elsewhere in the world. We sure wished they had though a bit harder…

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[26] My father was called "the father of us all" by many first-hour milbloggers and was credited with coining the term milblogger shortly after he started Mudville in March 2003. As my dad put it in a 2005 blog: "Mudville is far and away the largest, oldest, widest-read active-duty MilBlog in the World. I got there by not being stupid about comsec, opsec, and other such issues that end a lot of other guy's aspirations early on. It's all in how you make the words line up and dance."

[27] Here's how PFC Chris Missick from the Army's 319th Signal Battalion and author of the blog A Line in the Sand described it: "Never before has a war been so immediately documented, never before have sentiments from the front scurried their way to the home front with such ease and precision. Here I sit, in the desert, staring daily at the electric fence, the deep trenches and the concertina wire that separates the border of Iraq and Kuwait, and write home and upload my daily reflections and opinions on the war and my circumstances here, as well as some of the pictures I have taken along the way. It is amazing, and empowering, and yet the question remains, should I as a lower enlisted soldier have such power to express my opinion and broadcast to the world a singular soldier's point of view? To those outside the uniform who have never lived the military life, the question may seem absurd, and yet, as an example of what exists even in the small following of readers I have here, the implications of thought expressed by soldiers daily could be explosive."

Iraq Sucks

Greyhawk

Another day stuck in southern Baghdad in the blistering heat of a gray fortress called Camp Falcon. Bloody hell it is. Quite literally. First moment of downtime I've had all day. There truly is something unreal about this. I'm sitting posting late at night in my Army-issued "blacks," with a mug of coffee and my laptop blasting a bootleg copy of the Rolling Stones new album into my headphones.

I've seen action in Kuwait and Kosovo, but nothing compares to this. There's just GOT to be smarter way of fighting these kind of crappy watchemacallits – wars I guess. I can't stop thinking about that scene in Fallujah. Some 30-40 terrorists in headwraps stood anywhere from 30 to 400 meters in front of my tank. They stopped, squared their shoulders at us just like in an old-fashioned duel, and fired RPGs at our tanks. So far there hadn't been a single civilian in Task Force 2-2 sector. We had been free to light up the insurgents as we saw them. And because of that freedom, we were able to use the main gun with less restriction. How primitive war can be.

Posted by Greyhawk on September 24, 2005 at 8:49 PM | **Permalink** | **Comments (1)** | **Trackbacks (0)**

Network schmetwork

Greyhawk

It just beats me where all of those idiot-savants in DC keep getting all of those crappy new ideas. Network-centric they call it. And they have all sorts of fancy multi-color powerpoints to sell that crap to the politicoes. I'm not quite sure who's in the center right now, but I sure as hell hope it's some human. When will these brainiacs finally get it that it's good old GI Joe who's smack in the center of warfare. Not some highfalutin fantsy-schmantsy gadgets. How will a god-damn network protect me against yet the next *()#& IED that has my name written all over it. Don't get me wrong – I'm about as close to a nerd as you can get in this line of business, but it's body armor I need, not freaking networks!!!

Posted by Greyhawk on September 12, 2007 at 08:49 PM | **Permalink** | **Comments (1)** | **Trackbacks (0)**

This stuff actually works!

Greyhawk

Wow. That was awesome. I have to admit I was pretty down on all of the network-centric stuff that the brass keeps talking about. But what happened to me today almost made me a believer! Ever since we arrived here, we've been harrassed by these gangs who don't even seem overly concerned that we're supposed to run this twon now. They just run around town with rifles and all sorts of second-rate hand-guns. At worst, they'll have some small 12.7mm heavy automatic weapons that they mount on their crappy cars. The girls are really the worst. It's hard enough to tell the bad guys from the not-yet-bad ones, but these chicks…   Of course many of the local cops are on the payroll of these gangs so they don't do didley squat. Now what they want is clear: they want us outta here. They'll never attack us head-on of course – they think just some 'hit and runs' will do the job. But man – they have NO CLUE how good we've become at this urban crap. We've got intell up the whazzoo. And the coolest thing is that all of us get to see most of it on our HUD displays. It did take some time getting used to all of those lights and signs, but once you get the hang of it, you really start 'see'ing. And that really IS (almost) as good as armor – most of the time you don't even HAVE to protect yourself, you can just stay out of harm's way. And as to getting THEM – well they never see us coming of course. Almost feels like we're the snipers now. We're playing away, but we know and see a hell of a lot more than the home team. And MAN does it feel great to be on the other side for a change. The special ops guys are real aces (yeah – they're usually asses too ☺) at that. Anyway today one of those gangs had decided to hijack one of our convoy. I guess we found out about it – there really is very little that escapes us these days. Must be a nightmare for them. But so we had almost perfect ISR – we were keeping track of all of them all the way. And when the time came, we swarmed in on them and got to fry them with our snazzy new directed-energy gadgets.

Posted by Greyhawk September 12, 2010 at 08:49 PM | **Permalink** | **Comments (1)** | **Trackbacks (0)**

On Top of the World

Gotta tell you man – I feel pretty darn good about my job these days. I guess many kids like me who sign up for military duty don't really think much about what it is soldiers do. Of course there's the country, duty, the flag, most of us take that shit pretty seriously. But like from

bootcamp onwards, all you really pretty much think about is routines. The job that's gotta be done. And then come the tours of duty. That's when the job often gets dirty, but as the saying goes – somebody's gotta do it. And hey – that's really what you've signed up for. Now the WHY of all this is way above my paygrade (sometimes I wonder whether there's ANY life BELOW my paygrade…). That's the shit of the politicoes – not usually the most popular guys around in the forces. But on days like this, I really feel like I DO make a difference. And we've just gotten so much better at this. Long gone the days when shooting or being shot at was pretty much all you thought about. Even the 'hearts and minds'-stuff is really nothing compared to what we're doing now.

But so as I'm being shipped all over the world to play globocop, I hardly even stand still to think how incredible it is that locals aren't even trying to pull any stunts against us any more. In all of these goforsaken places, our technological gadgets are often just seens as witchcraft. And you don't mess with voodoo-stuff in this neck of the woods – even if the voodoo has southern Texas drawl. They know by now that to pull a gun against us is pretty much the same as committing senseless suicide. It was one thing to be willing to sacrifice yourself when you could take some infidels with you, but now that that's become almost impossible – the 'reward' isn't really quite the same. And since the world economy has been doing so well recently, the futures of these Arabs aren't nearly as bleak anymore. And that's the case pretty much all over the world. I never thought networks could have such a powerful deterrent effect.

Greyhawk

Naked in Algeria

Greyhawk

[posted offline, October 2012]

Must have been the darkest day of my life. And that's saying something, as it happened in the blasting sun. We were on patrol in the worst part of Sidi M'hamed. Tensions had been rising ever since the President made that gaffe on Al-Arabiyah the other day. So we were out in force – all over the city. Small units, as we've gotten accustomed to now, networked into a swarming beehive agaisnt which resistance is futile. Now the locals may be scared of us now, but they sure as hell don't like us. I remember telling Seryozha "If looks could kill, we'd be under a barrage attack right now'. And then it happened. Out went the lights. The familiar sights and sounds that had become such trusted friends over these past years suddenly disappeared. Now I've heard it explained a million times since I got back home, but I still don't quite understand what actually brought down the net. We'd always been told that the net was protected against this EMP-shit. Yeah right… There we stood. Lonely naked scared little bees, no longer connected to the hive, blind and paralyzed while surrounded by hungry predators. It's amazing how quickly the news got around that the infidels were 'naked'. I don't know whether it was because they saw the lights go out on our HUDs, or because they saw how we all suddenly went scared shitless. But the shouting and gesticulating grew ever more animated. In a few minutes, all that pent-up frustration erupted in a massive man-hunt on all Westerners. Afterwards we found out that over 5000 Allied troops were brutally slaughtered that day. It's a

bloody miracle that I escaped. Only thing I lost was the NATO badge that somebody managed ripped off my chest. But if we hadn't been on the outskirts of the town, we'd never had gotten of there alive.

Postcript (2025)

I retired. In fact there wasn't much to retire from. Now that our technological vulnerability had been so brutally exposed, the politicoes lost their appetite for such expeditions. We'd pretty much be sitting ducks anyways. Technology is pretty much everywhere now, and they now know as much about us as we know about them. We're all naked now. What looked like such a promising era of technological superiority proved to be just another transitory stage in the epic struggle in military history between offense and defense. And things are prettty even now. The Europeans still do a few things left and right. Whenever and wherever their own borders get exposed. 'Back to basics' was their motto after the Algerian debacle, where we all got wounded. America decided to lick is wounds on its own shores and to rebuild the network, but then in a more robust way. I don't know which is smarter.

7.   Conclusions and recommendations

7.1   Conclusions

By using a mix of various methodologies, the CCSS project team was able – within two months – to develop the Future Worlds that were requested by NC3A in a fully documented and replicable way.

7.2   Recommendations

The CCSS project team feels it has made a useful contribution to scenario-based planning in a number of areas (especially in distilling commensurable insights from different existing scenario exercises) that may still prove useful for defence planning in future LTRS reiterations. By following a process like the one presented in this study, defence planners can make better use of existing efforts to develop plans and force structures that are more robust against a wider range of plausible futures. At the same time, however, we still feel that the final reduction in
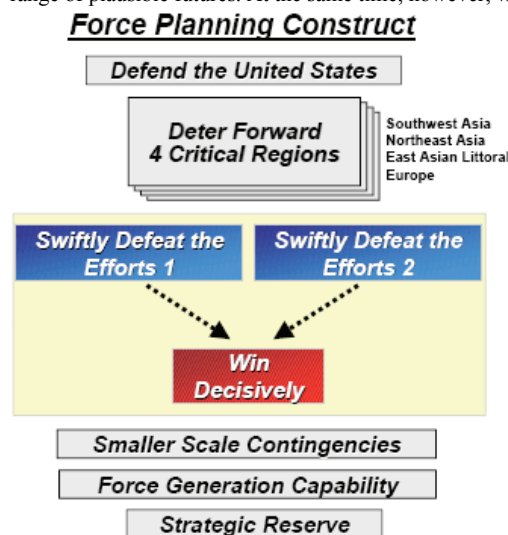
unnecessarily constraining and even
' and especially the associated
gination in ways that few abstract
antages – as they can easily lull the
ence that can lead to catastrophe.
in the course of the post-Cold War
io-based planning. Starting from the
the two canonical 'point scenarios' (2
focused more precisely on a South
current 1-4-2-1+ force planning
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precisely those ones, and
es from them.
d a number of components of what
ng – one which would use scenario
ncertainty[28]. The military operations
nputational and visualization
st 'strategic' level.

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[28] On this point, also see the evaluation of where the OR community stands on these issues in Operations Analysis Support to Network-Centric Operations. Report of the Military Operations Research Society's Report of its January 27-29 2004 meeting. http://www.mors.org/publications/reports/2004-Operations_Analysis_Support_to_NCO.pdf

8.   Signature

handtekening..   handtekening..

Ir. R.F.W.M. Willems   Drs. S.H.A.M. de Spiegeleire
Deputy Director CCSS   For the authors

Txt / Deze regel niet verwijderen!

Appendix A   Summaries of Scenario Exercises

1.   Table of Contents

2. ADF

2.1 Primary Characteristics

General Information

Organization:
The Defence White Paper 2000 and its subsequent 2003 update were published by the Government of the Commonwealth of Australia, specifically the Department of Defence and the National Security Committee of the Cabinet.

Year of Publication:
2000 (Update: 2003)

Background
Following the 1998 Federal Elections, the Australian Government committed itself to the task of publishing a defence White Paper. This decision was directly related to the growing concern that the Australian Defence Force (ADF) was under real pressure to meet an increasingly complex and diverse range of tasks within budgetary constraints that had remained constant over the previous 15 years. The government was concerned that a "mismatch had arisen between our strategic objectives, our defence capabilities and our levels of defence funding".

Available at:
   HYPERLINK
"http://www.defence.gov.au/whitepaper/docs/WPAPER.PDF"
   http://www.defence.gov.au/whitepaper/docs/WPAPER.PDF
(White Paper 2000)
   HYPERLINK
"http://www.defence.gov.au/ans2003/Report.pdf"   http://www.defence.gov.au/ans2003/Report.pdf   (Defence Update 2003)

2.2 Scope

Time Horizon
The White Paper, the first to be published since 1994, is concerned with long term developments. Although the notion 'long term' is not further defined, the relevant sections of the policy documents do not seem to have outlooks that transcend a 15 year period.

Focus of Interest

As can be expected from a defence White Paper, the policy document is primarily concerned with issues of defence and security. First, and foremost, the paper identifies the key strategic interests of Australia. Secondly, these interests are coupled with the geo-strategic position of Australia and political and military developments abroad. Finally, the paper discusses the role of the ADF in protecting the previously identified interests, and from this derives specific capability requirements for Australia's long-term defence planning. This paper therefore focuses on possible outcomes, and cannot be said to constitute a full-flexed scenario-building exercise. Threats and processes, however, are identified using similar techniques as used in the Alternative Futures approach, and are ordered according to geographical relevance to the Australian security environment.

2.3   Contents

Drivers of Change
> US Strategic Dominance
> Globalization
> The Evolution of the United Nations
> Regionalism
> Development of capabilities in the Asia Pacific region

Key Uncertainties
> Relations between the region's major powers
> Regional Stability

Key Certainties
> Australia's alignment with the United States
> Australia's support for Multilateralism

2.4   Summary of Scenarios

The Asia Pacific Region – the Level of Global Strategic Significance
> In general, the Australian Government believes that the forces for peace and stability in the wider region are strong, helped by the growth of regional multilateral initiatives. There is a strong likelihood that over the coming decades economic integration and political cooperation will increase. However, these developments will put strain on the relationships between major powers over the next two decades (as of writing). A remote but signification possibility remains for direct confrontation between major powers. Australia will side with the United States.

The Nearer Region – Australia's Security Periphery

The states of Southeast Asia and the Southwest Pacific comprise Australia's direct security periphery. Their security is directly affected by the wider region's stability. However, countries in the nearer region will face problems of their own. Conflicting maritime claims in the South China Sea can become catalysts of peripheral instability. Countries in the nearer region (Indonesia, Papua New Guinea and the Southwest Pacific Island states) face large economic and structural challenges. A balkanization of the Indonesian archipelago will adversely affect Australian security, and remains a possibility. Papua New Guinea faces similar challenges. Economic deprivation will continue to provide strong incentives for secessionist movements, while coups d'état are hardly unimaginable. Likewise, the Southwest Pacific Island states are threatened by similar developments. A proliferation of state failure and balkanization across the region will have to be taken into account. Terrorism will remain a strategic problem. Furthermore, while America will retain its strategic dominance, it will increasingly turn to its close allies to sort out 'second order problems'.

2.5   Methodology Used

The process of formulating the defence White Paper was supported by two extensive consultation programs. One engaged the wider community in the process, whereas the other focused on defence personnel. This gave all Australians the ability to participate in discussions on Australia's role in the world and the region, and the appropriate future role of the ADF. These views were taken into consideration when drafting the White Paper.
Discussions revolved around a Public Discussion Paper, released by Australian Prime Minister John Howard. This was not a statement of policy, but a starting point for discussion that examined key issues, and mapped out some of the options.

Australia's Government also approached a number of key allies, and made wide use of its diplomatic missions, both as a sending and as a receiving state.

2.6   Comment

Being focused primarily on the role and accompanying capabilities
of the ADF, the Defence White Paper is not the result of a full-
flexed scenario-exercise. Rather, it provides an overview of
plausible threats and offers policy recommendations on the basis
of these defined threats. However, the threats identified, and
especially the driving forces behind these threats, could be of use
in a further scenario-developing project. Although the final
projects are different in scope and in outlook, methods overlap.
Unfortunately, not too much is clear about the precise
methodology employed by the Australian government.
Furthermore, it is not always clear how identified driving forces
are related to threats. The fear for a proliferation of state failure in
the Southwest Pacific is an example of this. The geo-strategic
position of the United States, the level of globalization and other
driving factors obviously influence the way Australia would be
able to deal with such a situation. However, the threat itself
develops largely outside the methodological system. It is unclear if
this is considered to be an external shock or a systemic feature. To
conclude, some processes identified in the White Paper can
certainly be helpful in a future scenario-building exercise. The
paper does not, however, propose relevant scenarios. Further
research will investigate on which sources and possible scenario-
exercises the paper has been based.

3. AIRFORCE 2025

3.1   Primary characteristics

General information
- Air University, Maxwell AFB
- 1996
- AIRFORCE 2025; Tasked by Chief of Staff of USAF
- http://www.au.af.mil/au/2025/

Scope
- 1996-2025
- Capability-Based Planning: To identify the concepts, capabilities and technologies the United States will require to remain the dominant air and space force in the 21st Century

3.2   Contents

Drivers

- American World View
- Differential Rate of Growth (ΔTeK), proliferation, leverage and vitality of scientific knowledge and technical applications and their consequences.
- World Power Grid; the generation, transmission, distribution and control of power throughout the world

Key Uncertainties;
- American World View: Domestic or Global
- Differential Rate of Tech: constrained or exponential
- World Power Grid: concentrated or dispersed
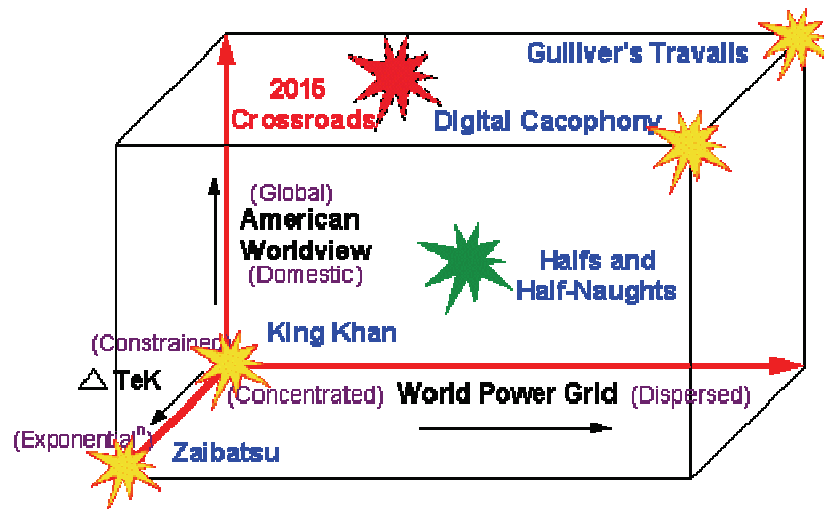
3.3   Summary of scenario(s)

4 scenarios on the corners of the planning space and 1 in the middle and 1 scenario where the US was to fight a war with its current capabilities.

Gulliver's Travails: This is a world of rampant nationalism, state and nonstate sponsored terrorism, and fluid coalitions. Territorialism, national sentiments, the proliferation of refugees, and authoritarian means flourish. The US is overwhelmed and preoccupied with such worldwide commitments as counterterrorism and counterproliferation efforts, humanitarian assistance, and peacekeeping operations. The US is attempting to be the world's policeman, fireman, physician, social worker, financier, and mailman. The US military, based in the continental United States, is not really welcomed overseas. This world forces the US military to devise systems and concepts of operation for meeting expanding requirements while maintaining a high operations tempo during a period of constrained budgets. The US world view is global, ΔTeK is constrained--evolutionary, not revolutionary--and the global power grid is dispersed.

Zaibatsu: In Zaibatsu, multinational corporations dominate international affairs and loosely cooperate in a syndicate to

create a superficially benign world. Economic growth and profits are the dominant concerns.While conflict occurs, it is usually through proxies and is short lived. Military forces serve more as "security guards" for multinational interests and property rights Technology has grown exponentially and proliferated widely. Global power is concentrated in a few coalitions of multinational corporations.

Digital Cacophony: This is the most technologically advanced world resulting in increased individual power but decreasing order and authority in a world characterized by fear and anxiety. Advances in computing power and sophistication, global databases, biotechnology and artificial organs, and virtual reality entertainment all exist. Electronic referenda have created pseudo-democracies, but nations and political allegiances have given way to a scramble for wealth amid explosive economic growth. Rapid proliferation of high technology and weapons of mass destruction provide individual independence but social isolation. The US military must cope with a multitude of high technology threats, particularly in cyberspace. The US world view is global, technological change exponential, and the world power grid dispersed.

King Khan: This world contains a strategic surprise in the form of the creation of a Sino-colossus incorporating China, Taiwan, Malaysia, Singapore, and Hong Kong. US dominance in this world has waned as it has been surpassed economically by this entity and suffered an economic depression. This has led to a rapidly falling defense budget and hard choices about which core competencies to maintain in a period of severe austerity.The American Century has given way to the Asian Millennium and the power, prestige, and capability that were once American now reside on the other side of the Pacific Rim. The US world view is decidedly domestic as it copes with problems at home, the growth in technology is constrained and world power is concentrated in a Chinese monolith whose economy, military, and political influence dwarf those of the US. The US has come to resemble the United Kingdom after World War II--a superpower has-been.

Halves and Half Naughts: This is a world in which there are both changing social structures and changing security conditions. The main challenge to the military is to prepare for a multitude of threats in a world dominated by conflict between haves and have nots. The world has split into two

unequal camps: a small, wealthy, technologically advanced, politically stable minority of the states and peoples of the world (roughly 15%) and the poor, backward, sick, angry, unstable vast majority of the world's states and people who have little, and therefore have little to lose, in seeking redress of their grievances.The US world view is global but only because of the threats to its security represented by these masses. Technology and power are bifurcated exhibiting trends in both directions in the divided world.

Crossroads 2015: In Kurdish areas of Eurasia, the US uses programmed forces from 1996-2001 to fight a major conflict. The choices and outcomes made at this juncture have much to do with determining which of the worlds of 2025 will emerge a decade later. The American World View is global, ΔTeK is constrained, and the World Power Grid is seen as concentrated but beginning to become dispersed. Potential future conflicts center on events involving disputes between the Ukraine and a resurgent Russia and the reaction of the rest of the world to such a conflict. The US in 2015 still has global commitments and concerns, but a constrained rate of economic and technological growth. Whether the US chooses a more isolationist path because of these pressures or chooses a more activist role with the sacrifices that would require is the major question to answer in shaping the world of 2025.

3.4   Methodology used

Alternate Futures, backcasting, Operations Analysis and value-focused modeling.

Methodology for identifying the drivers:

This process began with dividing the 225 study participants at the Air University (AU) into 14 seminars. Each seminar then used a combination of scientific and nonscientific methods to develop a list of potential drivers. The scientific methods involved analyzing various trends, conducting research on various topics, interviewing respected futurists and scientists, and completing affinity diagrams. The nonscientific methods involved creative thinking techniques such as brainstorming, "exploring," and "artistry." All told, over 100 candidate drivers were generated by this process. One or two individuals were then nominated from each

seminar to evaluate all of the potential drivers. These individuals comprised the *2025* Alternate Futures group.

This group's initial task was to identify drivers that were relevant to the customer and would significantly impact the future. The group accomplished this task by using affinity diagrams to coalesce the initial list into a smaller number of drivers. A variety of quality concepts and brainstorming techniques narrowed the initial list to five major candidate drivers. These candidate drivers were the US world view, the environment and level of resources, economic forces, technology issues including proliferation, and the nature of global power.

The group's goal was to consolidate these five candidate drivers into three drivers."

Following this plausible histories of the alternate futures where developed.

3.5   Comment

Very good and applicable to NC3A study.

4. BCAFIN

4.1 Primary Characteristics

- General Information
    1. Organization / Country of origin
    The *Aspire Australia 2025* project was commissioned by the Business Council of Australia. The BCA is an association of Chief Executives from leading Australian corporations with a combined national workforce of almost one million people. Membership covers all major sectors, from banking to the petrochemical and aviation industries.

    For the Aspire Australia project, the BCA engaged a large number of experts and policy makers from a range of backgrounds, including business, welfare, government and environment. Therefore, the project is appropriately described as a community-wide undertaking, encompassing the whole range of public and private life.
    2. Year of Publication
    After 12 months of effort and deliberation, the final report was published in March 2004.

    3. Background
    The *Aspire Australia 2025* project was commissioned in 2003 to commemorate the BCA's 20th anniversary. In the BCA's words, "the last two decades have brought tremendous change to the world in which Australians live. Yet, there is little to suggest that the pace of change […] will slow in the decades ahead." The aim of the project is therefore to inform the public policy debate by providing a framework for understanding what the future may hold for business, policy makers and Australians more generally.

    4. Availability
    HYPERLINK "http://www.bca.com.au/content.asp?newsid=94443"
    http://www.bca.com.au/content.asp?newsid=94443   (last visited 09/06 2005).

4.2 Scope

1. Time Horizon

As its name implies, the time horizon for the *Aspire* project is 20 years, and its scenarios are therefore mainly focused on the world situation in 2025. However, for two of the three scenarios, an explicitly incremental approach was adopted by the developers. In these two scenarios, they have identified three major time spans. The first ranges approximately from now until the end of the decade. This is followed by a period which lasts about 8 years, and a final time-period which ends in 2025, leading up to the end-state of the scenario. Therefore, these two scenarios paint a picture of the alternatives futures in five, 14 and 20 years.

2. Focus of Interest
    As the project received community-wide input, and was just as broad in defining its goals, this scenario exercise does not focus on one specific interest. Rather, the developers have tried to come up with three fundamental scenarios, from which different focus-specific conclusions can be drawn. As a result, the three multi-disciplinary scenarios are a little different in outlook. However, all are commented on by experts from 19 different perspectives, ranging from environmental issues to geopolitics.

4.3   Content

Due to the project's broad set-up, it is hard to analyze the different scenarios without the guidance of the discussion modules. For present purposes, the module on geopolitics is the most relevant. In that module, the three main scenarios are analyzed and translated into their geopolitical equivalents (Note that driving forces are largely distilled from the sector-specific module, whereas certainties/uncertainties stem from the overall scenarios).

-   Driving Forces
    America's International Dominance
    Evolving China
    Globalization
    Centrality of the State in International Relations

-   Key Certainties
    Sydney's Domestic Dominance
    Continuing Trend of Ageing Population
    Geographic Distance from Trading Partners

-   Key Uncertainties:
    Future of Social Cohesion and Value System
    Regional Stability

Speed and Direction of Economic Growth
Suitability Governance Structure
Scientific and Technological Innovation
Handling of Environmental Issues

4.4 Summary of Scenarios

Riding the Wave
US military and economic dominance is guarantor of peace and stability in
the Asia-Pacific region. This creates a largely benign economic and
security environment on which the Australian economy should be able to
thrive. However, domestic governance structures are increasingly
stagnating the economy, at a time when reform is hampered by a
proliferation of single-issue politics. Furthermore, popular sentiment seems
to preclude retrenchment on any of the achievements of the welfare state.
Therefore, "global prosperity is no guarantee of prosperity for Australia",
as domestic pressures cause institutional stagnation and reduce
competitiveness at a time when markets are increasingly internationalized.
"Creating conditions in favour of innovation and the building blocks of
growth are necessary if [Australia is] to grow in security, prosperity and
social harmony".

Stormy Seas
After an initial period of high growth, Asia-Pacific's stable environment
gives way to a structural decline in both stability and security. The global
balance of power gradually shifts away from the United States, and other
states are pressing for more power. As China's power increases, major
powers like India, Russia and Japan, and middle powers like Indonesia and
Australia must work out the combination of resistance and accommodation
that best serves their interest. Asia Balkanizes under pressures from
regionalization and fundamentalism. State failure will proliferate in the
Pacific. Australia will continue to look at the US to provide security in the
Asia Pacific region, but Washington will increasingly seek to out-source
such second-order problems to its allies in the region.

Changing the Crew
Globalization has worked, and states are increasingly marginalized as
players in a post-Westphalian international society. Regionalization will
fundamentally alter identity perceptions, as "a Jakarta youth may think of
himself as Javanese, a rapper, a Muslim and an extreme-sports fan, but
hardly at all as Indonesian." These forces, combined with still existing
non-conventional security threats, will increasingly bring the regional
players together. China will continue its growth, but other actors will be

able to extract benefits from complementary services. Australia, to continue the example, will be fortunate in having mostly complementary industries, such as resources, tourism, technical services and specialized manufacturing.

4.5   Methodology Used

To start out with, the BCA put together a project team consisting of 16 representatives with expertise across the disciplines. Together, they set out to understand the primary Australian concerns about the future. They obtained information from surveys and workshops. From these, six key themes emerged.

> Economic Growth and Social Change;
> Values and Cultural Norms;
> Global Competitiveness;
> Australia's Place in the Global and Regional Order;
> Sustainable Development; and
> Governance and the Political System.

Subsequently, research papers on each of the six themes were prepared by the Project Team   , forming the basis of focus-specific workshops organized in the subsequent stage. In these workshops, emphasis was placed on the identification of key drivers, certainties and uncertainties. From these, 10 original scenarios arose, many of which had so much overlap that they were merged into the final three. These three scenarios were then subjected to scrutiny in additional workshops, testing their internal logic and structure. Finally, the BCA invited experts in their fields to comment on the scenarios and offer their sector-specific perspective on them. From these discussions, the 19 sector-specific modules were drawn. Over its course, the Project Team derived its key technical expertise from Shell International's Planning and Scenario Unit.

4.6   Comment

The Scope of the project is probably simultaneously too broad and too narrow to warrant direct usage in the NC3A Future Worlds project. Too broad, in that the three scenarios are written so as to cover a whole range of issues, from which geopolitical and strategic implications have to be distilled with a certain level of inaccuracy. This is mostly the case with the 'Changing the Crew'-scenario, which hardly deals with geopolitical issues

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See "Australia in the Regional and Global Order"

apart from economics. On the other hand, the exercise may be too narrow in that Australians are - logically - preoccupied with their direct security periphery. Africa, for instance, is not mentioned on any of the report's 102 pages, as is South America.

The value of this report therefore lies in its indirect contribution to the wider debate. First of all, the geographically narrow approach resulted in an exceptionally thorough investigation of one of the most strategically significant regions of the near future. Furthermore, its broad nature, transcending traditional sectors, precludes a mono-disciplinary approach to the problem. Diverting attention to indispensable subject matters that are unfortunately easily overlooked, this approach draws attention to the importance of much ignored variables, and demonstrates their impact on alternative futures. Finally, the Aspire Australia 2025 report is extremely well-structured, well-written, and well-argued; something in which the considerable input from Shell's experts could be recognized.

5. BCAPREP

5.1   Primary characteristics

-   General information
    1.   Organization / country of origin
         The Project Team of the BCA's Aspire Australia 2025 project, most
         notably Peters Jennings of the Australian Strategic Policy Institute
         (ASPI).
    2.   Year of publication
         March 2004
    3.   Background
         The *Aspire Australia 2025* project was commissioned by the Business
         Council of Australia. The core group of the project was made up by the
         Project Team, a committee of experts guiding the process. One of the
         first steps in the general process was to prepare research papers on six
         key themes. "Australia in the regional and Global Order" was one of
         these themes.
    4.   Available at (internet site)
         HYPERLINK "http://www.bca.com.au/content.asp?newsid=94443"
         http://www.bca.com.au/content.asp?newsid=94443   (scroll down
         to: "research papers")

5.2   Scope

    5.   Time horizon
         The scenarios were developed with a 20-year timeframe in mind.
    6.   Focus of interest (governance and conflict, economy, environmental
         change etc)
         As research papers were developed on all six identified key themes,
         this scenario-building exercise was solely geared towards its specific
         focus: Australia's geopolitical and geostrategic environment.

5.3   Contents

-   Drivers of change
    America's Dominance
    Globalisation
    Regionalisation
    Australian Commitment to International Engagement

- Key uncertainties
  China
  Regional Stability
  WMD Proliferation
  Enlightenment vs. Fundamentalism

- Key Certainties
  Australia's Strategic Geography
  Demographic Projections
  National Age Profile
  Basic National Values

5.4   Summary of scenario(s)

Pax Americana
US military and economic strength confers fifty golden years of peace on the Asia Pacific region. China will initiate far-reaching political and economic reforms and will give up its military bid for power. With substantial American aid, Indonesia will hold together as a nation, within an international integrative project not much unlike the European Union. Australian and other foreign aid will preclude state-failure in the Southwest Pacific.

Pax Europa
The Asia-Pacific's middle powers work tacitly together, trying to block the spread of Chinese power and influence in the region, within a distribution of power much akin the European balance of power models from previous centuries. Washington still dominates at the strategic level, but has shifted attention to Europe and has accepted Beijing's sphere of influence in Asia. A nationalistic and far-from-pluralist China resents any form of foreign interference, but recognizes America's security guarantee for the Taiwanese. Its neighbors around the South China Sea opt for a nuclear strategy as a safeguard against Chinese domination. Militarization puts a break on economic development, and decreasing stability as ethnic groups feel increasingly deprived.

Balkan Wars
The world has witnessed a major breakdown in security. Tension on the Indian sub-continent erupts in inter-state conflict, leading to a nuclear war that demands full attention of the United States and United Nations. Meanwhile the Asia-Pacific region faces increasing troubles. State failure and civil war abound in the region, as separatist movements gain power and influence from Xinjiang in Northwestern China to the micro-states of the South Pacific. Quasi-independent states run by insurgency organizations gain increasing legitimacy and threaten the hold on power of many unpopular governments.

5.5   Methodology used

The BCA put together a project team consisting of 16 representatives with expertise across the disciplines. The Project Team conducted surveys and hosted workshops from which they distilled the six primary concerns of Australians about the future. Australia's place in the global and regional order was one of the key themes on which the Project Team decided to focus. Subsequently, the Project Team – in this case headed by Peter Jennings of ASPI – prepared the research paper on the basis of the key certainties, uncertainties and projected drivers for the future. The three emerging scenario's are not trend modeled, but are best-, median-, and worst-case scenarios, in which the previously identified variables function as guidelines.

5.6   Comment

The scenarios developed in this exercise stem directly from the extremes of the projected spectrum. In *Pax Americana*, all uncertainties and drivers work in favor of Australia's national interest, seemingly projecting an image of utopia. *The Balkan Wars*, at the other side of the spectrum, emphasizes Australia's reliance on its security periphery and the United States. Both contain provocative insights of what might happen under extreme conditions. It is interesting to note that the 'middle' scenario, *Pax Europa,* in itself presents a rather nasty state of affairs. Methodologically, the process is a bit murky, as scenarios and variables are rather unsystematically connected.

6. Boeing

6.1 Primary characteristics

General information

Boeing
Publicized in May 2004 and available at: HYPERLINK
"http://www.boeing.com/news/frontiers/archive/2004/may/ts_sf.html"
  http://www.boeing.com/news/frontiers/archive/2004/may/ts_sf.html

6.2 Scope

The study deals with the demographic, technology, economic and security &
information technology trends towards 2025.

6.3 Contents

trends
demographic
More affluent population
Age gap
Requirement of more competitive American labor
Accommodation to elderly

Technology
Costs
Exchange of information/integrated technologies

Economic
Rise of BRIC economies
Resume of high growth of economies of Asia-Pacific region
World economies linked faster
Increased energy demand

Security and information technology
Development of offensive information warfare capabilities
Integrated technology providing more security and more value
Interoperability between competitors for security

6.4 Summary of scenario(s)

No scenario

6.5 Methodology used

Expert meeting

6.6 Comment

The familiar developments can help to important drivers, but the lack of overall scenario does characterize its limitations.

7. Canada

7.1 Primary characteristics

General information
- Canadian Defence Forces
- 1998
- A strategy for 2020; a strategy document within the boundaries of the 1994 Defence White Paper
- http://www.vcds.forces.gc.ca/dgsp/pubs/rep-pub/dda/cosstrat/2020/03_e.aspScope
- 1998-2020
- Capability-based Planning for Canadian Defense Forces

7.2 Contents and Summary of scenario(s)

Domain	Benign	Base	Unstable
International	Stable	Uncertain	Unstable
Regional	Growing prosperity	Irregular development	Chaotic
Domestic	Prosperous federation	Maturing federation	Polarizing federation
Transnational	Manageable	Random "crises"	Regular "crises"

7.3 Methodology used

- " Consider where DND/CF is now and where we would like to be in 2020, starting with an environmental scan

• undertake a SWOT analysis, considering strengths and weaknesses of the institution, and the opportunities and threats presented in the environment
• from the environmental scan and SWOT analysis, identify the 'strategic imperatives', i.e. the challenges that DND/CF must address if it is to attain the future it wants
• create a set of strategic options with different attributes that represent different degrees of change and emphasis in the critical areas necessary for an effective future force and institution
• **map out a range of possible emerging, alternate futures that represent varying degrees of stability and threat, both domestic and international**
• test the strategic options in these emerging futures and look for qualities that would be the most capable in all futures
• define the best overall strategic option ['our future force'] and create a vision description for that option
• identify the 'distinctive competencies' needed to underpin that preferred option
• strengthen the option by improving the qualities that will render it as robust as possible in the different alternate futures
• undertake a gap analysis between our current and desired ability, specifically in the areas of: distinctive competencies; challenges in addressing the imperatives; overall weaknesses from SWOT
• referring to the strategic imperatives and a description of the preferred future option, define a set of longer term "strategic objectives" to provide overall direction toward 2020
• drawing on the gap analysis, define five-year goals for each of the strategic objectives as a basis for tangible actions to be taken."
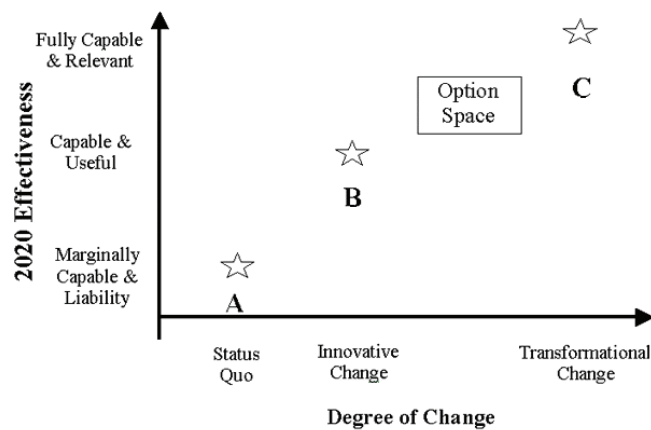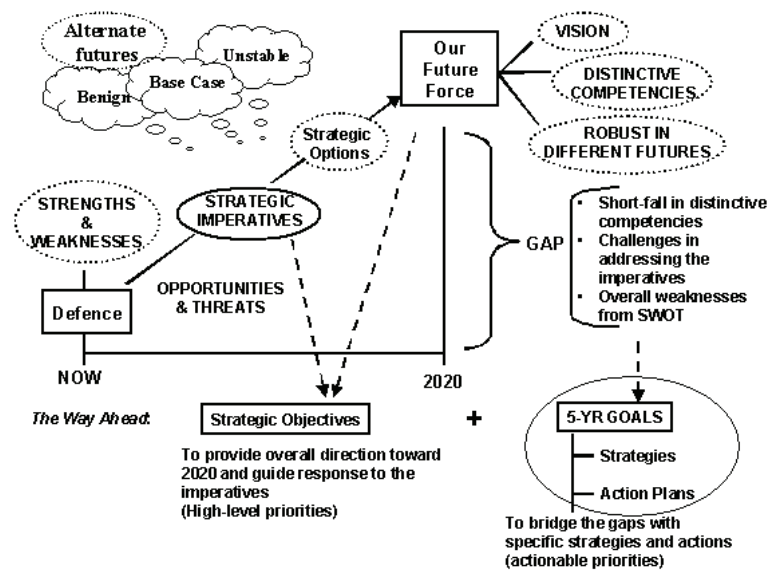
7.4 Comment

Good and applicable.

8. Challenge Forum

8.1   Primary characteristics

General information

- The *Challenge!* Forum, a UK based think tank, is a loose international partnership of expert individuals, most of whom have occupied senior planning or management roles in commerce and the public sector.
- The web site www.chforum.org offers hundreds of pages of analysis and speculation on the changing world.
- Year of publication: 2003
- http://www.chforum.org/index2.html

Scope

- Time horizon: 2002-2025
- Integrated / generic scenario combining economy, governance, social, environmental en technological factors.
- Exploratory / descriptive scenario.

8.2   Contents

- Two **key drivers** of change (two axes/variables, see model below):

  - Horizontal axis: commerce/economic factors ("impersonal forces dictate events") or social and institutional factors prevail ("incapacity or re-invention or governance").
  - Vertical axis: the international arena from "friendly", open and well-policed to "friction-generating" and complex.

The international environment becomes increasingly open and well-policed

New Deal

Adaptation is forced on nations and firms through the workings of impersonal forces

Social and institutional structures tend both to limit and to shape the nature of events

Broken Edge

International relations become increasingly fractious and complex.

- Implicit drivers:

    o Technology (biotech and IT)
    o US-EU relationship
    o Education

- **Three fundamental trends** are discerned (but not quite clear how they are used):
    o The nature of the economy is changing (knowledge based)
    o Increasingly limited capacity to take choices in the public domain
    o The industrial world is faces with unhappy democracies

8.3   Summary of the 2025 scenarios

In 2003 the Challenge Forum created two new scenarios for 2025 that built on earlier scenarios from 2001 for the year 2020. The initial scenarios were called "Pushing the Edge" and "Renewed Foundations." The new scenarios "have grown organically from the previous cases", which is reflected in the names: "Broken Edge" and "New Deal":

Broken Edge
Capital markets do well and there is a boom around biotechnology and in the renewal of traditional industries through the use of advanced software. America's successes in many of the troublesome regions and political movements of the world breeds a confidence in its approach to the international arena. Investment choices are influenced by foreign policy and subsidies flow to support corrupt powers. Many companies outsource activities to nations which are not ready to take on the task. Pragmatic accommodations, corrupt practice and misreporting develop rapidly. Trust is weakened, friction between the US and European interests grows, and the activities of the industrial powers alienate a generation. The international

order proves too weak to support all of this which leads to sharply increased international friction. Firms that bet their all on internationalism are confronted by trade barriers, untrustworthy supply chains, renewed terrorism and by the theft of intellectual property. [CO]

New Deal

Capital markets undergo sharp deflation and profitability proves hard to sustain. Low economic performance means that commitment to social spending cannot be met. This combines with a general dissatisfaction with public institutions and private enterprise in the wealthy world, giving rise to a wave of activism. The world population of graduates will equal the number of people living in the industrial world by 2010 and double by 2020. Networks of commerce specific to the industrialising countries develop strongly as does an IT structure that is less focused than hitherto on the rich world. The apparent failure of the old industrial nations allows a surge of creativity and enquiry as to 'who we want to be'. Many social experiments are put in place. It is widely recognised that whilst there are many bad ways of running a state there is no absolutely correct way. The gloom in the old industrial world begins to clear after the second business cycle of the millennium (2010>). This is not however an altogether kind world and many who lack the skills to participate are effectively disenfranchised. The habit of thinking in groups, of reviewing positions and seeking resilient relationships makes the renewed union between the industrialising countries and the old industrial nations a rich process. By 2020, there are working institutions who govern issues of tax, trade, intellectual property and mobility. There are security frameworks which seem likely to last. This is a plural, decentralised and individualistic world that resembles nothing seen before. [CO]

8.4   Methodology used

- The methodology used is not made explicit for the 2020 and 2025 scenarios (although the website does provide two papers on the general practical and conceptual issues that are involved in scenario planning).
- Both sets of scenarios appear to be the product of brainstorming by expert groups (number of participants not provided), workshops and trend analysis.

8.5   Comment

Although methodologically not very explicit, scenario axis may prove of use and an example for NC3A.

9. Climate change

9.1   Primary characteristics

Organization: the Global Business Network (GBN)
Year of publication: 2003
Background: Published by the Pentagon
Internet site:

http://www.ems.org/climate/pentagon_climate_change.html

9.2   Scope

Time horizon: 2005-future (no specific end date)
Focus of interest: Abrupt Climate Change and influence on National
Security US

9.3   Contents

Drivers of change: - gradual global warming leading to a relatively abrupt
                         climate change

Certainties: -   global warming in the 21st century

Uncertainties: - cold   - food
                         - Dry→   - water
                         - Storms   - energy

9.4   Summary

Schwartz and Randall only describe one worst case scenario. In this Scenario
gradual global warming could lead to a relatively abrupt slowing of the ocean's
thermohaline conveyor, which could lead to harsher winter weather conditions,
sharply reduced soil moisture, and more intense winds in certain regions that
currently provide a significant fraction of the world food production. With
inadequate preparation, the result could be a significant drop in the human carrying
capacity of the Earth's environment.
The temperature could drop 5-10 degrees Fahrenheit in a single decade. The altered
climatic patterns could last for much more than a century. Conditions:

- Annual average temperature drops by 5 degrees over AIA and north America and 6 degrees in northern Europe.
- Annual average temperatures increase by up to 4 degrees in Australia, South America and Southern Africa.
- Drought persists for most of the decade in critical agricultural regions and in the water resource regions for major population centers in Europe and Easter North America .
- Winter storms and winds intensify, amplifying the impacts of the changes. Western Europe and the North Pacific experience enhanced winds.

This might lead to economic malaise, border management and a destabilization in the geopolitical environment, leading to skirmishes, battles, and even war due to resource constraints such as:

1. Food shortages
2. Decreased availability and quality of fresh water
3. Disrupted access to energy supplies

Countries will have two fundamental strategies:

- Defensive: Nations with resources build virtual fortresses around their countries, preserving the resources for themselves.
- Offensive: Less fortunate nations especially those with ancient enmities with their neighbors may initiate in struggles for acces to food, water or energy. Unlikely alliances could be formed and the goals is resources for survival rather than religion, ideology or national honor.

9.5   Methodology

Nothing is mentioned about the methodology. It is mentioned that leading climate scientists and experts have been interviewed.

9.6   Comment

GBN is a well known developer of scenarios. I have only found a summary of this scenario on the internet. In the scenario itself its is mentioned that this scenario is highly unthinkable . If it would happen than probably only in a few regions, rather than globally. Also the magnitude of the event may be considerable smaller. Climate scientists and experts however have been interviewed for this scenario and they acknowledge the possibility of a abrupt climate change. It can be of value to the project to use the abrupt climate change as a driver or a wild card.

10.CSIS

CSIS Seven Futures Project
http://216.12.139.57/index.cfm

Timeframe
2025

Publication
2005

Methods
Trend analysis

Drivers & Scenarios?

Population

The World Population: Currently at 6.30 billion, the total world population will grow by almost two billion by 2025. Eighty percent of the world's population will be in countries least capable of supporting further population growth.

Rate of Population Growth: The rate of population growth (i.e., the ratio of total increase in population each year to the mean population) has decreased drastically since the 1960s. It will continue to fall. By 2025, the world population will likely be growing less than 1% annually. According to the latest estimates from the United Nations, the global population could stabilize in the year 2100 at about 11 billion people.

Global Generation Gap: The population of the developed world is contracting. At least 33 countries across the world are expected to be substantially smaller than they are today. Populations in these developed countries are also getting old--and in the case of Germany and Japan and a few others, *very* old. In stark contrast, a number of developing countries will have very young populations that their economies may not be able to support.

Hyper-Urbanization: Another huge problem facing us is "hyper-urbanization." By 2025, the portion of the world's population living in urban areas will constitute nearly 60% of the total world population. Already, up to one-half of the populations in the largest cities in the developing world is living in unplanned and illegal squatter colonies that are highly vulnerable to disease and natural disasters.

Resource Management

Food: Despite dire predictions, starvation has declined drastically since the end of the Second World War. The issue now is whether increases in productivity can keep up with rises in population. This issue involves not just global food production, but also the availability and distribution to specific food-deficient regions throughout the world. In light of diminishing land resources, new advances in biotechnology--and shifts in public attitudes--may be necessary to avert severe dislocations.

Water: The most serious resource challenge in 2025, we believe, will be the scarcity of water. In a number of geographical areas, populations are growing as freshwater

availability is declining. The effects of this widening imbalance include poor sanitation and public health, inadequate irrigation, and profound geopolitical implications.

Energy: Our view is that reliance on hydrocarbons is not likely to change significantly through our 25-year timeframe. The geopolitics of energy, however, will change. We expect to see a significant concentration of production in the Persian Gulf. On the demand side, we expect to see drastic increases in the developing world, Asia in particular.

Food, energy, and water will work in concert with many of the other revolutions (particularly population and conflict) to affect the overall health of the environment over the next 25 years. Preventing environmental degradation, which has affected many parts of the industrial world, may become a greater consideration in industrial and agricultural practices.

Technology

Computation: We should expect continued remarkable increases in processing speeds, especially as advances in molecular and quantum computing find practical applications. In addition to achieving new speeds, computers will become ubiquitous--throughout our workplaces and our homes (if those are not the same thing), on our bodies, and even in our bodies.

Genomics: In genomics, the first wave of advances will change the face of medicine by generating new levels of genetic diagnosis, new methods of genetic therapy, and, by 2025, germ-line therapy--which, in effect, will give us control over our own heredity. In addition, advances in the area of proteomics, the study of the body's proteins, will widen the pool of new medicines and cures.

Nanotechnology: The world is on the threshold of a period in which products will be far lighter, far stronger, and far more efficient. Current applications of micro-electro-mechanical machines are already extensive, ranging from controlling operations in cars to use in a variety of medical procedures. There is expected to be a movement from this technology to the molecular and even atomic levels. This will revolutionize materials science, chemistry, and physics.

Knowledge

Information Economy: Economists have traditionally pointed to three "factors of production": land, labor, and capital. In the information economy that is materializing, all of these will be overshadowed by a new and primary factor: knowledge.

We are about to witness the growth of what Federal Reserve Chairman Alan Greenspan calls the "weightless economy"-- an economy in which knowledge and know-how assume ever more significant positions relative to the "material" world.

Knowledge Diffusion: The knowledge revolution is systematically breaking down national barriers, redefining communities, evolving new cultures. Access to information and knowledge has been facilitated by the development of Cyber-Universities like Mexico's Universidad Virtual and University of Phoenix.

Knowledge Gap: Knowledge is increasingly perishable. As a result, not everyone will be able to engage in lifelong education. This knowledge gap is likely to create large social inequities, a problem policymakers will be pressed to adress.

Information Flows and Security: Increasing dependence on information flows also means increasing vulnerability. Hacking, identity theft, and cyberstalking are all types of destructive, predatory behavior that can be accomplished with relatively little know-how and few tools.

Economic Interaction

Benefits of Integration: The aggregate output growth rate has steadily increased an average of more than 3.6 percent annually in the last 25 years, and we expect the trend to continue through 2050. The benefits of this level of integration apply to developed and developing country alike. In fact, the United Nations Development Program maintains that developing countries have achieved in 30 years what the industrialized nations took 100 years to accomplish.

Global Inequities: The obstacles to continued economic development are tremendous. A staggering 2.8 billion live on less that $2 a day. In fact, 1.2 billion live on less than $1 a day. The evidence suggests that these income gaps are widening, not closing.

Conflict

Asymmetric Warfare: In the future, the year 2001 will be remembered for the formal arrival of asymmetric warfare in the United States. The insidious attacks on September 11 represent a quantum leap in the scale of modern terrorism, and unfortunately seem to herald the beginning of an era in which groups and organizations, with the determination to cause great destruction, will seek to use weapons of mass effect- including nuclear, radiological, biological, and chemical weapons.

Cyber-warfare: Another threat looming over nations is cyber-warfare. Armed with the tools of cyber-warfare, sub state, non-state or even individual actors are now powerful enough to destabilize targeted states and societies.

Intra-state Warfare: The patterns of conflict during the past few years indicate a decline in the number of disputes between nations, but intra-state warfare is on the rise. The effects of this type of conflict often spill over to neighboring nations, and in light of WMD proliferation are increasingly dangerous for belligerents and non-belligerents alike.

Governance

NGOs: NGOs are leveraging technology as never before, contributing to a surge in integration within the NGO community and the globalization of civil society groups. Expect to see a sharpening of governance within civil society through alliances and other techniques once reserved for the private sector.

Corporations: In 2002, General Motors earned revenues making it the 24th largest economic entity in the world. New demands are emerging on corporate governance (corporate citizenship). Companies face the challenge of juggling a triple bottom line from shareholders, management, and the public at large.

Governments: The "atomization" of authority (primarily through technology, the conferral of greater authority to the individual) is making it difficult for governments to respond to the needs of their constituencies, on the one hand, and to address broader social goals, on the other. Governments across the world are falling behind.

International Organizations: Many of the constraints that apply to the nation-state also apply to international organizations. The grueling debate over the role of the United Nations in the current situation in Iraq have demonstrated how realities have simply outpaced the capacities of many of the Bretton Woods organizations.

Verdict

No full scenarios (they are more like thematic scenarios, or even predictions) or explicit methods, yet interesting. As drivers and trends in a global scenario the abovementioned topics could be worth looking at.

11. Energy

11.1 Primary characteristics

Organization:	Shell International
Year of publication:	2001
Background:	Long term scenarios to focus on the future of energy, first developed in 1995
Internet site:	http://www.shell.com/static/royal-en/downloads/scenarios.pdf

11.2 Scope

Time horizon:	2001-2050
Focus of interest:	Energy

11.3 Contents

Drivers of change:
- energy resource scarcity
- new technology
- social and personal priorities

11.4 Summary of scenarios

Dynamics as Usual

Dynamics as Usual is a world where social priorities for 'clean', 'secure' and, ultimately, 'sustainable' energy shape the system. But it is a world of shifting social priorities, of conflicting interests, intense competition among suppliers, and a wide range of maturing and emerging technologies. The transition to a sustainable, but increasingly diverse and
complex, energy system is far from smooth.

Dynamics as Usual highlights the key drivers of resource scarcity, environment and security concerns, competitive responses by incumbent technologies and competing societal priorities. Looking back from 2050 the energy transition looks to be a continuation of past dynamics. Societal demands for cleaner, more convenient energy
drive a gradual shift from high- to low-carbon fuels, and towards electricity as the energy carrier. The path towards a range of new renewables is relatively direct –

supported by strong gas growth in the medium term – but only after advances in energy storage and the
development of a next generation of renewables around 2025. By 2050 renewables could account for a third of world primary energy and be supplying all incremental energy. But underlying this transition is a process of intense competition, maturing new technologies and shifting social priorities, which makes the transition anything but smooth – that
is to say *dynamics as usual*.

<u>The Spirit of the coming age</u>
The impact of a major discontinuity in energy technology is highlighted. The driver is a superior end-use technology pulled by consumers, which remakes the energy system around it. The key point is the potential for new technologies to emerge from unexpected parts of the energy system. An indirect path toward renewable energy is flowed, with advanced hydrocarbon technologies providing a bridge to a hydrogen economy in countries like China and India and eventually creating a large demand for renewables and nuclear. On the surface this world appear chaotic because to the disruptive new technology. The early period is one of wide experimentation, with the eventual winners hard to see. But underneath a new infrastructure logic is emerging, although this only becomes clear after several decades.
In *The Spirit of the Coming Age* superior ways of meeting energy needs are developed to meet consumer preferences. This is a world of experimentation and many failures. It is the story of a solution that triggers a technology revolution and a reminder that discontinuities can arise from seemingly mundane parts of the energy system. In the early twentieth century a new engine technology, coupled with a portable and dense fuel, transformed transportation. This revolution started with fuel in a box, sold in local hardware stores, adequate for limited travel along the few paved roads. Efficiency considerations drove development of today's fuelling infrastructure – now a valuable economic asset as well as a barrier to change. A century later, mobility is seen as one of the keys to the freedom, flexibility, convenience and independence that people want, and increasingly expect. Time is precious. Information and communication technologies dominate, creating a feeling of continuous movement even when people take advantage of the internet to stay put.

11.5   Methodology

Nothing is mentioned about the methodology. Shell is a well known and experienced corporate scenario developer and uses external experts as well as an internal scenario team to develop its scenarios.

11.6   Comment

Shell is a well known corporate developer of scenarios. The quality is high. The value for the project is not really great. But the scarcity of energy can be an important driver for international politics.

12. European Commission

12.1   Primary characteristics

- General information
  - European Commission, Forward Studies Unit
  - Published: July 1999
  - Background: in 1997, with the 3rd millennium approaching, EC required long term views on future of Europe.
  - EC Aims:
    - Stimulate debate inside and outside EC of future of European integration
    - Develop a tool to provide perspective EUs policies and strategies and contribute to their improvement.
  - http://europa.eu.int/comm/cdp/scenario/scenarios_en.pdf

- Scope
  - 1999-2010
  - Focal point: future of European integration.
  - Entirely qualitative; narrative style, 121 pages.

12.2   Contents

- Five key themes (on which "partial scenarios" were built):
  - Institution and governance
  - Social cohesion
  - Economic adaptability
  - EU enlargement
  - Europe's external environment

- Drivers of change (in "global scenario")
  - Technology / work organisation
  - Culture / values
  - Governance:
    - politics
    - general public
    - administration
  - EU Institutions
  - Labour markets and social policies
  - Other economic policies
  - Globilisation (steady increase or slowdown)

- Regional security
  - Central and Eastern Europe
  - Mediterranian
  - USA
  - Russia
  - Asia

12.3   Summary of scenario(s)

See: Chapter VII "Scenarios at a Glance (Key Drivers)" on p77 of report for a
matrix of the key drivers and their implication in each scenario.

Triumphant Markets
'Third Industrial Revolution' will be marked, accompanied by explosion of
entrepreneurship ('virtual enterprise'). Unchallenged leadership of the American
model in technological innovation will also be present and enterprise organisation
(shareholder value). Also, strong emphasis on self-reliance but widespread feeling
of insecurity. Residual family solidarity. Materialism and consumerism common.
There will be greater acceptance of social exclusion. Regions vs. central
governments (national and EU) will show tension and there will be 'inequality of
governance' across localities and social groups. People will be increasingly
withdrawing from public life and there will be mistrust of collective action. There
will be a downsized public sector and outsourcing of public services will be
common. The private sector may take over traditional public functions.

The Hundred Flowers
This scenario will be marked by things such as: trend growth slowdown;
exploitation of some technologies (e.g. bio-technologies); devolution of large
organisations; and, explosion of one-person operations and informal networks.
Belief in neighbourhood solidarity and local self-help will be strong and women
will be particularly active. Paid work will be less important. Common will be
anticonsumerism and 'do-it-yourself', but enthusiasm for information and
communication technologies will grow. 'Green' values will be prevalent. There
could be a crisis of large bureaucracies and nationstates. Creation of new states
may happen. Noticeable will be participation at local level, apathy at national and
European level (especially large states). Mistrust of government and big business
(including media) will be common. Other trends include: disobedience, tax evasion
and boycotts. National administrations are deemed to be largely incapable of
reform and bureaucracies are seen to be largely irrelevant. Public functions
performed by associations and private organisations.

Shared Responsibilities
'Third Industrial Revolution' will be facilitated by policies for re-orientation of
technologies toward the users (public/private partnerships). Stakeholder model of

enterprise will be apparent: 'win-win' flexibility. There will be a renaissance of
social/ecological awareness, belief in responsibility and civic solidarity, and
widespread tolerance of diversity. New politicians will be at odds with old
bureaucrats. There could be a European initiative for reform of public sector and a
broad consensus both for the reform of the public sector and social institutions.
Any reform will be according to the principles of: decentralisation, transparency
and responsibility. There will be an important minority - 'active citizens' who will
be conditioning political and community life. There will also be an increased role
for evaluation and control mechanisms relative to regulation and implementation
(and shrinking of traditional ministries could be widespread).

Creative Societies
This scenario would be marked by: trend growth slowdown; strong political
impulsion to develop green technologies and training technologies. There would be
reorganisation of enterprises around democratic/egalitarian lines and there would
be revolutionary social/ecological awareness. Reaction against structures
dominated by 'economic rationality' would be common. Violent uprisings (in a
number of countries) could be sparkled by an EU co-ordinated plan to cut social
protection. Europewide forums would be formed to discuss the future of European
societies. We would see a crisis and reform of nation states around socio-ecological
priorities. There would be increasing participation in community and political life
following a period of social upheaval. NGOs would be active in the provision of
some public services (education, training, assistance to low-income people).

Turbulent Neighbourhoods
A trend would growth slowdown with Europe increasingly at a disadvantage in
world competition, especially in hi-tech sectors. Political interference in re-
organisation of large enterprises would be seen and there would be increasing risk-
aversion. There would be a pervasive fear of the future but also a 'back to roots'
intolerance (including gender backlash). Also likely: creeping racism, and concern
with economic and even physical security (urban crime, mafias, war in the near
abroad). There could be a political centre of gravity towards right-wing populism
('Fortress Europe') and a re-legitimisation of the state as well as diffuse support of
authoritarianism. Media may be encouraging a fear of diversity. Security may
prevail over transparency. Obsolescence of public services could also be prevalent.

12.4   Methodology used

(See chapter VII for Methodology)

"Expert group" approach:
- Internal EC experience/knowledge was starting point.
- Input from international relations institutes (amongst them *Clingendael*).
- Largely process of structured brainstorming and an elaborate step-by-step
  synthesis.

- No model used in building scenarios
- **Scenarios were built in two stages**: partial (theme specific) scenarios subsequently integrated into global scenarios. For an elaboration on "two-step approach see a. & b.

a. Production of partial scenarios[30]

The production of the partial scenarios worked as follows. **Five themes** were chosen for their capacity to capture and illustrate developments relevant for the future of Europe and its process of integration. They were: institutions and governance; social cohesion; economic adaptability; enlargement of the EU; and Europe's external environment. For each theme a working group was created, comprising 12 to 15 Commission officials chosen for their competence on the subject and their interest in a scenario exercise.

1. Present a paper illustrating the main facts about the theme
2. **Brainstorming exercise** to put together a rather comprehensive list of the variables that can have an impact on the theme. Each variable is subsequently classified as factor or actor. Factors are defined as the structural trends that are considered important in shaping future outcomes. Actors are defined as those players that can influence factors in an interactive fashion.
3. A **questionnaire** is submitted to each member of the working group, in which he is asked to sketch alternative paths of evolution for each shaping actor or factor.
4. Each group is asked to concentrate on a smaller number of variables, which are most liable to make the difference between the possible versions of the future. To facilitate the choice each factor/actor can be ranked along two dimensions: uncertainty and impact. Those variables that score the highest on both dimensions are selected as **'pivot variables'**.
5. Taking into account only the pivot variables, the group selects a number (typically ranging from 6 to 8) of plausible and consistent combinations of the **'mini-scenarios'.** This means that each combination contains one mini-scenario (in some cases a mix of two mini-scenarios) for each 'pivot variable' and that the mini-scenarios are considered to fit well with each other across the variable spectrum. Once the working group is satisfied with the selection of combinations, the other (non-pivot) variables are attached to each combination, as it subjectively seems.
6. Writing of the partial scenarios. Based on the 'skeleton' of miniscenarios, a script (about 3,000 words long) is produced to give **narrative form** to each partial scenario.

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[30] Source:
www.iiiee.lu.se/home.nsf/0/37f35c92c9856c6cc1256e99002ce3b4/$FILE/Example%20Scenario%20Analysis.pdf

b. Production of global scenarios

Each working group having produced a set of five partial scenarios (five scenarios on governance, five scenarios on social cohesion etc.), the Forward Studies Unit moved

to the **second stage** of the Scenarios project, namely the production of global scenarios.

1. Consistency **ranking** of the combinations of partial scenarios
2. The steering group retains the 8 to 10 more salient and consistent combinations which resulted from step 1. The **combinations are reduced to 5** through a process of merging and elimination.
3. based on a rereading of the partial scenarios, **a number of key drivers, recurring in the different working groups, are selected**. The role of the key drivers is succinctly described for each global scenario.
4. The **scenarios are tested** on groups from both inside and outside the Commission. Criticisms and comments are collected, examined and, if deemed appropriate, incorporated in the scenarios.
5. A script (about 4,000 words long) is prepared to give a **narrative form** to each global scenario.
6. **Finalisation** of the global scenarios. The draft global scenarios are subjected to two rounds of screening and discussion: first by the authors, then within the steering group.

A selection of variables was considered in writing each of the scenarios. For each variable a succinct description is provided, characterising its behaviour in a given scenario. Because they interrelate across the different scenarios, the variables receive the name of key drivers. To capture the interrelations, the scenarios and the key drivers are presented in **a matrix format (Fig. 1, see below).** Read vertically, the matrix describes the scenarios through the key drivers; read horizontally, it describes the key drivers through the scenarios. **The horizontal reading is particularly interesting, as it allows the reader to appreciate the similarities and the dissimilarities across the scenarios on a number of important points.**

12.5   Comment

- Thorough methodology (but time-consuming). Exploratory / descriptive scenario. Does not make use of global models.
- The two-stage approach (partial scenarios → global scenarios) may be useful example for NC3A project.
- The scenarios have a rather short-term horizon (2010), but many of the drivers, choices, problems and challenges mentioned are still relevant for the European dimension while building scenarios for NC3A in the 2005-2025 timeframe.

13. Geopolitics

13.1   Primary characteristics

- General information
  - The *Challenge!* Forum, a UK based think-tank, is a loose international partnership of expert individuals, most of whom have occupied senior planning or management roles in commerce and the public sector.
  - Year of publication: 2004
  - Background: The scenario is the outcome of a team effort, initiated by *Shell International* on the occasion of the 30th anniversary of scenario-planning at Shell.
  - http://www.chforum.org/library/groupscenarios.html

- Scope
  - Time horizon: 2004-2030
  - Focus of interest: **geopolitics and international conflict** in the decades following 9/11.

13.2   Drivers & Methodology

Method:

- "Geopolitics – the Next Wave" is the result of **brainstorming by an expert panel** on the state of the world.
- The exact number of participants in sessions not provided
- The steps taken in the sessions are shown, but not as much how choices were made.
- Trend analysis appears to be the dominant method.
- From these sessions the main demarcation lines emerged, and the team zoomed in on the most controversial and the most frequently mentioned topics.

Key Drivers: **Two dimensions** were distilled by the expert panel, which are expressed in two key questions (on which this entire scenario-building exercise hinges):

- Does our planet face catastrophe or unprecedented opportunity? (Is the future is seen in terms of **fear or opportunity?** / optimistic or pessimistic perspectives)
- Should the major players use **power or good example** to lead the world forward? (TBZ: Boils down to the use of "hard power" or "soft power")

<u>Other drivers</u>: Interestingly, the report concludes, much attention was paid to the dimensions of power and fear, whereas technology and economic dimensions were not frequently mentioned as drivers of change.

<u>Matrix:</u>
The two dimensions are represented in a **2x2 matrix** that provides the framework of the report. Two axis are defined (A-B and 1-2):

The future is seen in terms of:

How the major powers will respond:	**Fear and Angst**	**Exploiting the opportunities**
Using force to impose progress	A1	B1
Power of persuasion showing the way	A2	B2

<u>Four worldviews in the post 9/11 world</u> were subsequently developed and placed in the four quadrants of the matrix:

- A1 : The forces of evil have to be defeated - use force for people's own good (the American neo-cons are considered to be at the heart of this mindset and worldview).
- B1: No desire to initiate a massive crusade, but carrying a big stick.
- A2: Accept that we are at a dead end, encourage the necessary paradigm shift.
- B2: Positive attitudes and enlightened self-interest; conviction that only change of behaviour can safeguard our future.

The future is seen in terms of:

How the major powers	**Fear and**	**Exploiting the**

will respond:	Angst	opportunities
Using force to impose progress	The forces of evil have to be defeated	No crusade, but carry a big stick
Power of persuasion showing the way	Acceptance that this is a dead end	Positive attitude and enlightened self-interest

Extra initiatives undertaken by expert panel (see matrixes in Appendix below):
- Within the matrix structure, the expert team tried to position individual countries and organizations (USA, China, UK, Australia, France, NGOs, Club of Rome).
- The team also used the matrix for showing which geopolitical development the world had experienced in the last forty years.
- They then gave their personal assessment of the relevance and probabilities of the "four worlds" shown in the matrix, in the medium and long term (as distinct from desirability) by giving grades. The B2 scenario scored best, which is a obvious sign of optimism for the state of the world in the year 2030.

13.3   Summary of the four scenarios

From the four clusters of opinions and worldviews three scenarios were extrapolated. A1 and B2 are the two extremes, or "poles."

A1 – Using Power Unilaterally to Confront Challenges
In this world fear of terrorism is strongly exaggerated and used by political leaders to mobilize constituents. (Worldview: The forces of evil have to be defeated – use force for people's own good). Governments are expected to use all means to trace people evil intentions and pre-empt the next strike. Security and defense expenditure soar. The US plays a key role in this scenario and although unilateralist rhetoric is abandoned, the Bush-approach is maintained. It will be increasingly difficult to distinguish where America's campaigns are self-serving and where they are driven by idealism. Europe lacks the determination and central leadership need to achieve superpower status. The scenario is not clear on whether China poses an immediate threat to western interest in the coming decades. The world is nevertheless in a permanent state of costly semi-war, but on the positive side the battles against crime and terrorism are quite effective. However, in their desire to justify their cause, political leaders in the western world simplify the options available and come close to fundamentalist thinking.

B2 – Negotiated Settlements; the unstoppable drive towards global democracy

The aftermath of the war in Iraq is a turning point in history showing the severe limitations of military power. The need for legitimacy in future interventions strengthens the UN. Europe remains stable and China, although growing increasingly powerful player, resists the temptation to build up a threatening force. The West accepts that its relative power in the world declines as a natural development. The underlying driving forces of this scenario are not idealistic, but pragmatic. People want to get on with their lives and growing information flows increase awareness and tolerance. Lacking sufficient means of "hard power" Europe has most affinity with the scenario, but the US will also reluctantly make this shift in a world where the power-balance is far more dispersed than in the late 20th century.

B1 – Tactical Interventionism; Using "stick and carrot" on a global scale
In this scenario pragmatic interventionism on a legitimate basis is considered necessary to help the world forward. Spreading democratic institutions, civil liberties are a sine qua non of development and prosperity, but ideological battles are avoided. The US plays a key role in this scenario, but in first instance as the enforcer of decisions of the world community ("removing bad apples"). In this scenario, the US image in the world will once again be as positive as it was in 1945 and 1991.

A2 – Compromises, compromises …; running out of options, but stopping short of global disaster.
International tensions increases in the world as terrorism is on the rise and solutions seem ever more elusive. A choice is made in the Western world to convince poor countries of the merits of their systems and the damaging prospects of fundamentalism and extremism by using the power of persuasion instead of force ("showing the way"). This scenario has many "muddling through" elements, without offering or imposing clear solutions.

Scenario Probability (projection scenarios through time)
Projected on recent history (1980-2003) and the future until 2030, the experts came up with the following chart. A1 thinking increased strongly in the course of the 1990s. B2 thinking, while seemingly far fetched in 2003, is expected to rise in the future.

Four worldviews : relevance and probability, 1980 - 2030
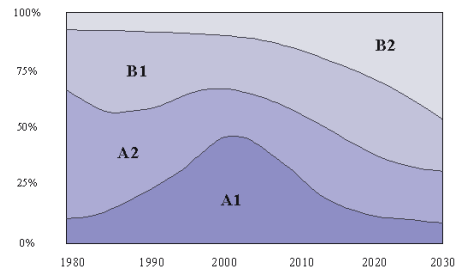
Subsequently, the teams saw two different routes for the transition from A1 to B2.
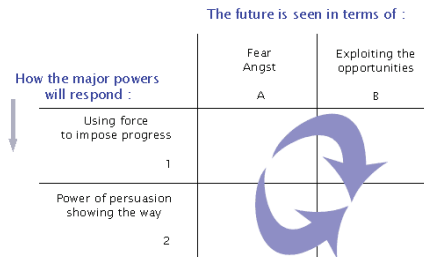
The two most likely developments in the medium term

13.4   Comment

- Although methodologically not always explicit, this *Challenge Forum* scenario may provide several good examples for NC3A study.
- The idea that "we are moving towards an B2 world" is vague.
- The graphic projection of different scenarios through time ("scenario probability") may have added value for NC3A study.

14. Northrop Grumman

14.1   Primary characteristics

General information

Name: Defining the Future of National Security: A Planner's Guide
Purpose: To help identify changes in the near term national security environment
(2004-2011)
Publication: 2004?
Available at: http://www.analysiscenter.northropgrumman.com/files/fnsb.pdf

14.2   Scope

Time Horizon: 2004-2011
Focus of interest: National security environment

14.3   Contents

Trends:
- Strategic environment remains challenging
- National Security Budget remains relatively robust
- Capabilities still required across the spectrum
  - Emphasis may shift

Drivers:
- Leadership has limited flexibility to change
- Resources most likely tight but adequate
- Most programs survive, weak ones shrink the most
- Requirements remain mostly constant

Measures of Merit:
- Strong organizational leadership support is key
- Affordability increases in importance
- Capabilities should be unique, critical to mission accomplishment, and
- broadly applicable

Three wild card scenario's
1: Global War on Terrorism (GWOT) continues and expands:
2: Significant success in GWOT
3: Port of Long Beach attacked with both conventional and radiological "dirty

bombs"

14.4   Methodology used

Project case studies
Historical budgetary analysis

14.5   Comment

Its limited time horizon limits its use for the NC3A Future Project. In addition its
scope is limited to use for defense industry.

15. GSC

Global Scenario Group
Branch Points: Global Scenarios and Human Choice
Gallopin, Hammond, Raskin and Swart
http://www.tellus.org/seib/publications/branchpt.pdf

15.1   Primary characteristics

Timeline
2050+ (literally: "21st century")

Year of publication
1997

15.2   Scope

Global scenarios (for sustainability policy making); explorative with a 'hint' of normative thinking.

15.3   Methods

Quantitative trend analysis + qualitative narrative; analysis done by four expert authors + input from entire GSG.

Analysis sequence: Current state → driving forces → key uncertainties (→ attractive and repulsive forces "that can substantially redirect beliefs, behaviours, policies and institutions towards some futures or away from others", which determine which future will be realised) → alternative futures, scenarios.

15.4   Contents

Drivers
Population growth
Economic growth
Technological change
Decentralisation of authority
Equity trends

Resource depletion
Pollution and global environmental change

15.5   Summary of Scenarios

3 Classes, 2 variants each:

Conventional Worlds: Essential continuity with current patterns
1. *Reference*: Mid-range population and development projections + typical technological change patterns;
2. *Policy Reform*: Strong, comprehensive and coordinated government action, as called for in many policy-oriented discussion of sustainability, to achieve greater equity and environmental protection.

Barbarisation: Envisions the grim possibility that the social, economic and moral underpinnings of civilisation deteriorate, as emerging problems overwhelm the coping capacity of both markets and policy reforms.
1. *Breakdown*: Unbridled conflict, institutional disintegration and economic collapse;
2. *Fortress World*: Authoritarian response. Ensconced in protected enclaves, elites safeguard their privilege by controlling an impoverished majority and managing critical natural resources, while outside the fortress there is repression, environmental destruction and misery.

Great Transitions: visionary solutions to the sustainability challenge, including new sociao-economic arrangements and fundamental changes in values. Transition to a society that preserves natural systems, provides high levels of welfare through material sufficiency and equitable distribution and enjoys a strong sense of social solidarity.
1. *Eco-communalism*: A green vision of bio-regionalism, localism, face-to-face democracy, small technology, and economic autarky;
2. *New Sustainability Paradigm*: Changes the character of the urban, industrial civilisation rather than replacing it, to build a more humane and equitable global civilisation rather than retreat into localism.

15.6   Comment

Thematic scope seems too focused on sustainability, but the scenarios and drivers are very generic (= useful). Drivers are very general, for a large part quantitative, while qualitative methods are used in the scenarios to compose a narrative; it seems that the authors have found a good balance between numbers and 'stories'. Structured methodology, interesting classification of scenarios (in classes and variants), perhaps useful as a model for security scenarios.

16. India 2020

16.1   Primary characteristics

General information
- India
- 2002
- Planning Commission, Government of India
- http://planningcommission.nic.in/reports/genrep/pl_vsn2020.pdf
- 2002-2020
- The report was commissioned to offer a vision for Indian in the next decades. It covers all aspects of society. This template only refers to those relating to defense and military matters.

16.2   Contents

Drivers of change
- Transnational revolution of rising expectations: Widening gap between people's aspirations and their accomplishments
- The twin revolutions of rising expectations and information-communications.
- The fundamental ideological conflict between Pakistan and India.
- Territorial disputes with neighbours that have defied resolution for fifty years may not lend themselves for easy solution.
- Religious extremism and radical politics.
- Rising dependence on energy imports.
- Public opinion, both domestic and international, and the media will be increasingly important forces in international affairs.
- The international order is likely to evolve into a polycentric configuration with its centre of gravity shifting increasingly to Asia, which will include seven out of the ten largest economies and six out of the eight nuclear weapon states.
- The increasing economic and military strength of China may pose a serious challenge to India's security unless adequate measures are taken to fortify our own strengths.
- Availability of tools for terrorism

Key uncertainties / certainties
- *Development of relation with India's neighbours*: The fundamental ideological conflict between Pakistan and India is unlikely to be resolved without a major social-political change in Pakistan.

- *Impact of Terrorism:* Religious extremism and radical politics will continue to have adverse impact on our core values.
- *Rising dependence on energy* imports will make us increasingly vulnerable economically, as well as diplomatically.

16.3   Summary of scenario(s)

not explicit

Assumption: The world is likely to be confronted with the drivers and uncertainties mentioned above.

16.4   Methodology used

There is no explicit methodology for identifying the drivers. The report is narrative and does not discuss methodology. A mere summing-up of key factors is provided. The report is based on contributions by leading thinkers in the various fields.

16.5   Comment

No methodology, but interesting for a non-Western perspective.

17. INMM

17.1   Primary characteristics

General information
- INMM
- Year of publication: 2002
- INMM presents "snapshot" of driving forces and uncertainties on which global leaders can base their strategic decision for the post 9/11 world.
- Available at http://www.itpnm.com/INMM%20Post%209-11%20Scenarios.pdf

17.2   Scope

- Time horizon not quite explicit: estimated at 2010
- Focus of interest: terrorism, international relations and conflict.

17.3   Contents

Drivers of change (dominant U.S. perspective):
- The spread of fundamentalist cells world wide
- Vulnerability of U.S. infrastructure
- Availability of WMD components
- Use of conventional weapons in WMD event
- U.S.-Russia cooperation in the war on terror
- Increased defense and homeland security budgets
- Global economic downturn – haves and haves not
- Addressing global despair
- Stability of third world governments
- Global conflicts growing in scope
- New NATO-Russia Council

Two axes used for constructing scenario chart (presented as
the two critical uncertainties):
- **Catastrophic Terrorist Events** (from "events on
  a worse scale of destruction than 9/11" to 'Global
  efforts stem the tide of terrorism')
- **Global Unity** (from 'the International Rule of
  Law prevails' to 'global conflicts threaten to bring
  the world to the brink of war)
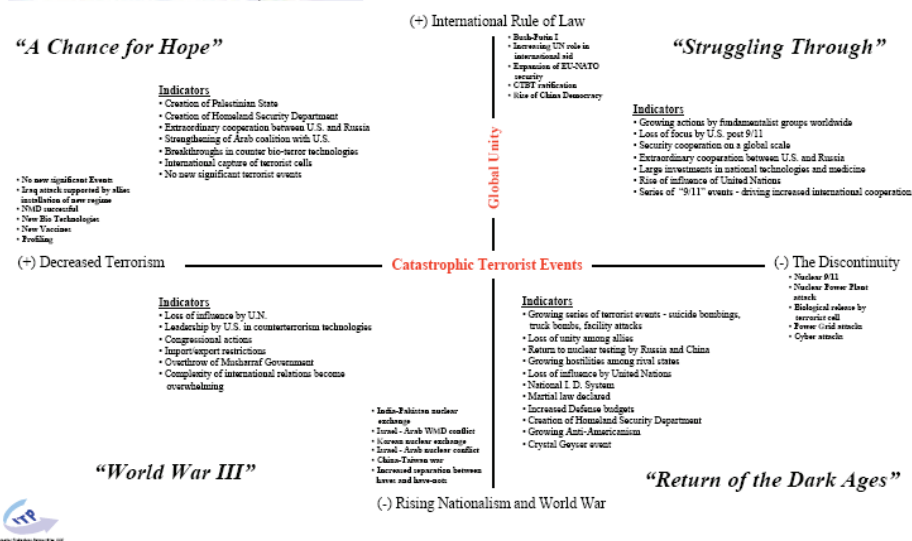
17.4   Summary of four scenarios

A Chance for Hope
- Creation of Palestinian State
- Creation of Homeland Security Department
- Extraordinary co-operation between U.S. and Russia
- Strengthening of Arab coalition with U.S.
- Breakthroughs in counter bio-terror technologies
- International capture of terrorist cells
- No new significant terrorist events

World War III
- Loss of influence by UN
- Leadership by US in counter-terrorism technologies
- Congressional actions
- Import/export restrictions
- Overthrow of Musharraf Government
- Complexity of international relations become overwhelming

Return of the Dark Ages
- Growing series of terrorist events – suicide bombings, truck bombs, facility attacks
- Loss of unity among allies
- Return to nuclear testing by Russia and China
- Growing hostilities among rival states
- Loss of influence by United Nations
- National ID System
- Martial law declared
- Increased Defence budgets
- Creation of Homeland Security Department
- Growing Anti-Americanism
- Crystal Geyser event

Struggling Through
- Growing actions by fundamentalist groups worldwide
- Loss of focus by US post 9/11
- Security co-operation on a global scale
- Extraordinary co-operation between US and Russia
- Large investments in national technologies and medicine
- Rise of influence of UN
- Series of "9/11" events – driving increased international cooperation

17.5   Methodology used

Not made explicit.

17.6   Comment

Scenario chart + drivers and elements of actual scenarios may be of some use.

18. JDCC

18.1   Primary characteristics

Joint Doctrine and Concept Centre
Contributing to the MOD defence planning process.

Published March 2003, updated until 24th January 2003
It is one of many pieces of work that will be drawn upon by the UK MOD to help
inform the development of the UK Defence White Paper on Defence Strategic
Guidance, which is due to be published in Summer 2003.
Available at
http://www.jdcc-strategictrends.org/index.asp

18.2   Scope

Seven dimensions: Physical, Social, Science and Technology, Economic, Legal,
Political and Military.

18.3   Contents

The study uses three elements to view where the world might go
-Trend (pattern of change, linear, accelerating or decelerating)
-driver (factor directly influencing or causing the change)
-shock: High Impact Low probability event:

Drivers:
Global society
Political geometry
Demand for resources
Impact of technology

Trends:
Decline in state sovereignty
Greater requirement for UK Armed Forces to operate in complex terrain
Evolving politico-military alliances
Increasing mutual antagonism between Islamic and Western cultures

New Environments for conflict: space and cyberspace
Likely new nuclear and WME powers
Increasing calls for humanitarian intervention
Proliferation of new technologies
Inter-state migration becomes a greater issue
Increasing turbulence worldwide
Competition for scarcer natural resources
US military will alter concepts, diplomacy and military footprint
Fundamentalist reaction to Western (particularly US) power and culture
Increased effectiveness and destructive power of the asymmetric threat
Failing states becoming a greater threat to global security than resurgent ones

Shocks (high impact, low propability):

The Gulf Stream could be switched off dramatically cooling the UK

Declining human fertility through chemical pollution

Deliberate contamination of UK food or water supply by terrorists or agents of a hostile state

A breakthrough in energy technology such as fusion power would transform the world economy.

Natural disaster (e.g. asteroid impact) causes massive loss of life

Outbreak of a new virulent infectious disease quickly kills millions

Christian revival in the West prompts a reverse of secularisation

A significant UK military defeat or mass casualty attack on the UK would dramatically alter public support of the Armed Forces

Hostile state or terrorist group conducts major 'Information Systems attack' (cyber terrorism) causing collapse of vital UK infrastructure e.g. National Air Traffic Control System.

Computers have a widespread autonomous decision making capability

Biomedical breakthrough slows human ageing, leading to almost unmanageable social consequences

Solar activity disrupting or destroying US/NATO space systems during key operations

Global collapse of financial system undermines confidence in capitalism

A prolonged economic downturn reverses globalisation through a new wave of protectionism

Deflation replaces inflation as the primary economic demon

New OPEC oil shocks reverse globalisation

Significant elements of the developing world co-operate to contest G7 dominance of the terms of trade

New taxes on currency and stock speculation used systematically to transfer resource to developing countries

A sustained economic downturn could cause transnational companies to withdraw their interests to their home base, hurting open economies dependent on foreign direct investment

Significant and prolonged disruption to the City of London would have a catastrophic impact on the UK economy

Action by the EU to protect national defence industries could provoke retaliation by USA, threatening UK access to US technology and equipment.

International convention declares nuclear weapons to be unlawful

Senior officer in UK Armed Forces is prosecuted for war crimes

UK reasserts national supremacy over European Courts

Clash of civilisation between the West and Islam prompts widespread armed conflict.

UK and France lose seats as Permanent Members of the UN Security Council.

Future US administration withdraws co-operation from international bodies such as the UN and NATO.

Collapse of the Euro.

A coherent and assertive pan-Arab or wider pan-Islamic alliance as a counter to the West

A widespread movement in the developing world to act to rebalance global power

A Russia-China-India alliance to counter what they perceive as a hegemonic US

An independent Scotland and/or Wales breaks defence links with England

Tension over any oil discoveries in Antarctica or the Falklands

A long term strongly unilateralist US posture would significantly alter the international order, potentially splitting the EU from America, and causing others to form new coalitions to oppose US power.

China becomes a democracy

Arab states unite to invade Israel and 'liberate' Palestine

The employment of WME by a state would have fundamental implications for the current security framework, causing some states to suspend their proliferation efforts and others to speed them.

US-European decoupling and low European defence spending could enable or encourage conventional military threats to Europe to re-emerge, perhaps from a resurgent Russia or the Middle East by 2030.

Hostile state develops new WMD technology

Nuclear exchange between two non-UK, non-ally countries

Widespread chemical or biological warfare attack against a UK city

2. Summary of scenario(s)

No scenarios, but the implications of the drivers, trends and shocks are linked through all dimensions.

18.4   Methodology used

First commissioned in May 2001 and after consultation and public discussion published in March 2003. The analysis is broken down in to seven dimensions: Physical, Social, Science and Technology, Economic, Legal, Political and Military. The narrative provides a broad view of where the world might go (within these dimensional areas) if we follow current **trends** and based upon the current **drivers**.

The findings from the workshops initiated detailed research in certain key areas, including a broad variety of commissioned academic work. JDCC then took all of the data available and conducted further analysis into the subjectivity and objectivity of the data. More research was initiated to make the overall analysis as objective as possible whilst at the same time discarding areas where there was no likely significant defence and security implications. The internal team had access to most relevant UK intelligence and has not included anything that is inconsistent with it. Where source protection did not allow some material to be used, we have referred to open sources. Shock analysis was conducted through a separate research paper and elements of this work have been incorporated, as appropriate, into the dimension papers.

Analysis of likelihood:
Throughout the seven dimension papers we have tried to give a clear assessment of how robust we believe our findings to be - especially within the periodic summary of 'Defence and Security Implications'. For example: we are sure that computer processor speeds will increase by 2030; we suggest that Moore's Law will be exceeded; but we are 'unsure' what order of magnitude processor speeds will reach in 2030. Where the prose is emboldened within the shaded areas, there has been subjective analysis of the statement in order to be as objective as possible:

Prose (it/it is...)	Confidence %	Confidence level
Will	100	Certainty
Probable	90-100	High confidence
Likely	66-90	Medium confidence
Possible	0-66	Low confidence

3.   "General verdict" on quality scenario and its value for NC3A Future Worlds project.

The number of workshops, consultations and discussions has given the study a wide information source. The study uses many developments from seven dimensions and collected a wide number of possible shocks. The clear definitions and the dimensions are well linked to strategic security trends. In combination with the identified uncertainties, the study can be a very valuable contribution and information source for describing scenario's, despite the lack of scenario's of its own and the limited focus of following current trends and current drivers.

19. McNair

Tangredi, S. All Possible Wars? Toward a Consensus View of the Security
Environment, 2001-2025.

19.1   Primary characteristics

Timeframe
2025

Year of publication
2001

19.2   Scope

Comparing several global security scenarios, Tangredi attempts to formulate a
'grootste gemene deler', a hybrid set of drivers & scenario, for the security
situation in 2025.

19.3   Contents

Uncertainties
- Creation of a standing UN military force that will supplant U.S. influence
- Congressional repeal of restrictions on direct U.S. military involvement in
  domestic law enforcement
- Worldwide economic collapse
- Cascading environmental disasters
- Development of a military near peer sooner than expected
- Failure or hostile takeover of a key U.S. regional ally
- Rise of neo-facism or ethnic hatred as potent ideologies

Consensus Views
Threats:
- No rival ideology to compete with democracy
- No rival military coalition
- No global conventional military peer competitor
- Economic competitors (but no resulting war)
- Regional military challengers (but disagreement on who—China, Russia,
  (rogue states)
- More failing states

- More non-state threats to security

Military Technology:
- Diffusion of advanced military technology
- Commercial availability of significant operational intelligence
- Retention of U.S. lead in an expanding RMA
- Technological surprise unlikely (but by the United States or ally, if any)

Opposing Strategies:
- Continuing U.S. control of the seas and air
- Antiaccess/area-denial strategies by regional powers
- WMD likely in large-scale combat with U.S. forces
- Increasing vulnerability of American homeland to asymmetric attack
- Increasing importance of information warfare

Diverging Views
Nature of Conflict:
- It is unlikely that two major theater wars (MTWs) would happen simultaneously, or two near-simultaneous MTWs will remain a possibility.
- Future wars will be more brutal with more civilian casualties, or information operations and precision weapons will reduce the lethality of warfare.
- Chaos in the littorals or panic in the city are more likely contingencies than major theater war, or major theater war will remain the primary threat to security.
- Space will be a theater of conflict, or space will remain a conduit of information, but not a combat theater.

Threats:
- A near-peer competitor is inevitable over the long term (and preparations must be made now), or preparing for a near peer will create military competition (thus creating a near peer).
- Overseas bases will be essentially indefensible, or future capabilities will be able to defend overseas bases.

Opposing Strategies:
- Current (legacy) U.S. forces will not be able to overcome antiaccess strategies except at high cost, or techniques of deception or denial of information will remain effective in allowing legacy systems to penetrate future antiaccess efforts.
- Nuclear deterrence will remain a vital aspect of security, or nuclear deterrence will have an increasingly smaller role in future security.
- Conventional military force will not deter terrorism or nonstate threats, or U.S. military capabilities will retain considerable deter or coercive effects against terrorism and nonstate threats.

19.4   Consensus Scenario

In 2001–2025, U.S. Military Forces Must Prepare for:
- Military challenges by a regional competitor
- Attempts by a regional competitor to attack the U.S. homeland utilizing asymmetric means
- Use of antiaccess/area-denial strategies by regional competitors
- Use of WMD by regional competitors as part of antiaccess operations
- Involvement in failed states and in response to nonstate threats at *discretion* of national command authorities, but *some* degree of involvement is inevitable
- Operations in urban terrain and under "chaotic" conditions, by *some,* but not *all* of the force
- Continual diffusion of military technology to potential competitors and nonstate actors
- High level of information warfare

19.5   Comment

Useful.

20. Middle East

20.1 Primary characteristics

Organization:	the Global Business Network (GBN)
Year of publication:	2005
Background:	Scenarios are made by order of the World Affairs Council
Internet site:	

http://www.gbn.com/GBNDocumentDisplayServlet.srv?ai
d=30287&url=%2FUploadDocumentDisplayServlet.srv%
3Fid%3D31127

20.2 Scope

Time horizon:	2005-2015/2020
Focus of interest:	Politics in Middle East

20.3 Contents

Drivers of change:	-	realm of security
	-	issues of political reform
	-	issues of peace
Certainties:	-	fairly high oil prices
	-	staggering population growth
	-	decline of resources available

20.4 Summary of scenarios

Stalemate
The present situation continues. The pressure of change is not great enough, the price of failure not high enough. Things may still have to get worse before there is enough momentum for fundamental change. The world of 2020 would resemble today.

The miraculous middle east
Outside pressure, especially with respect to the settlements in the Middle East and in the West Bank and reform in Saudi Arabia, are key to driving this scenario. The heart is a reform process: increasing political openness and better leadership lead to much broader economic progress and political legitimacy of the regime. Security is

increases by order in Iraq, success within Iran, and steady progress in the war with al Qaeda. It is the "Arab spring" scenario. It is the accumulation of small breakthroughs in Iraq, Israel and Palestine, Lebanon and Egypt. But there is much slower progress in Iran, Saudi Arabia and Syria. Circles of rising trust in the economy, feeding political participation and openness. The Middle East is more open and transparent and is better connected to the world, making possible more opportunities for mutual collaboration. The new Palestinian state works and terrorism slowly diminishes and religious moderates aggressively drive politics in their own societies. Outside players mostly do the right thing, support the right moves and don not interfere too much. The US invests much more in diplomacy, education and the tools of collaboration and less in military intervention. The US would have to reduce its dependence on imported oil so that other countries would join that effort. The Arab countries have the opportunity to participate in the great wave of globalization.

The new exodus
Things get worse. There are vicious circles of rising antipathy, falling trust and poor economic performers. The demography proves overwhelming. The attitude is I would rather we both lose, than you win. Iraq slowly falls as the chaos increases. The US presence persists to maintain order, but it really is a civil war in Iraq.
The Palestinian state devolves into something like Somalis; think Mogadishu and the result is Intifada III.
Saudi Arabia is in turmoil. The regime is not successfully challenged because there is not ca coherent opposition. It is just turbulence, low-level disruption and falling reliability u as an oil exporter. The results are higher oil prices and increasing uncertainty, even if the oil flow is mostly uninterrupted.
Iran succeeds in developing or obtaining nuclear weapons. Civil war and partition reign in Iraq and the US cannot get out. Iran takes part of Iraq and the US can not do anything because of Iran's Nukes.
Nuclear proliferation is increasing with nearly every major nation in t the region actively developing nuclear weapons. Egypt and Syria are shooting at Israel form time to time. Egypt is and authoritarian nightmare, sinking into vast poverty.
Syria reasserts itself in Lebanon and triggers new conflict in the region. The US continues to lose the goodwill of the people as its main focus in son bombs and bullets. Anti western radicals win elections and terrorism in on the rise with major attacks inside the region and elsewhere. Israel is totally dominated by security concerns.
Economic development is stalled. Demographic realities overwhelm the Jewish state as Arabs in Israel increase in percentage. The talent leaves for better opportunities and secure environments.

20.5   Methodology

Nothing is mentioned about the methodology. There are some other books of GBN mentioned so the scenarios might be based on more global scenarios of GBN.

20.6   Comment

GBN is a well known developer of scenarios. These scenarios of the Middle East are part of a speech so not very extensive. It might have some value for this project because it concerns global security and the role of the US.

21. National Intelligence Council (NIC)

21.1   Primary characteristics

General information
- National Intelligence Council, CIA, United States
- 2004
- Background
- http://www.cia.gov/nic/NIC_2020_project.html

21.2   Scope

- 2003-2020
- How key global trends might develop over the next decade and a half to influence world events.

21.3   Contents

Drivers of change
- Globalization largely irreversible, likely to become less Westernized
- World Economy substantially larger
- Increasing number of global firms facilitate spread of new technologies
- Rise of Asia and advent of possible new economic middle-weights
- Aging populations in established powers
- Energy supplies 'in the ground' sufficient to meet global demand
- Growing power of nonstate actors
- Political Islam remains a potent force
- Improved WMD capabilities of some states
- Arc of Instability spanning Middle East, Asia, Africa
- Great power conflict escalating into total war unlikely
- Environmental and ethical issues even more to the fore
- US will remain single most powerful actor economically, technologically, militarily.

Key uncertainties / certainties

- Whether globalization will pull in lagging economies: degree to which Asian countries set new "rules of the game"
- Extent of gaps between haves and have-nots, backsliding by fragile democracies; managing or containing financial crises
- Extent to which connectivity challenges governments
- Whether rise of China/India occurs smoothly
- Ability of EU and Japan to adapt work forces, welfare systems, and integrate migrant populations, whether EU becomes a superpower
- Political instability in producer countries; supply disruptions
- Willingness and ability of states and international institutions to accommodate these actors
- Impact of religiosity on unity of states and potential for conflict; growth of jihadist ideology
- More of fewer nuclear powers; ability of terrorists to acquire CBRN weapons
- Precipitating events leading to overthrow of regimes
- Ability to manage flashpoints and competition for resources
- Extent to which new technologies create or resolve ethical dilemmas
- Whether other countries will more openly challenge Washington; whether US loses S&T edge.

21.4   Summary of scenario(s)

Davos World: robust economic growth, led by China and India reshape the globalization process, making it more non-Western and affecting the political playing field as well.

Pax Americana: American hegemony persists; EU and US get closer together; US is the world's policeman although reluctant at times, Asian states accept American leadership for now

A New Caliphate: A counter movement based on radical religious identity politics challenges the West's moral and cultural dominance.

Cycle of Fear: concerns about proliferation lead to intrusive security measures, stifling globalization.

21.5   Methodology used

Comination of Trend Analysis and Scenarios
The report is based on consultations with nongovernmental experts around the world, six conferences on four continents. This was augmented with conferences and workshops on specific issues of interest. These conferences and workshops produced data and drivers. Highlighting key regional trends that had global implications served the basis for developing eight global scenarios. Eventually four scenarios were selected.

21.6   Comment

Plus: Useful, good methodology, interesting scenarios, extensive detail of trends and drivers, authoritative excercise
Minus: no focus on defence planning but on describing alternative futures *sec*

22. OECD

22.1   Primary characteristics

General information
- OECD
- Published October 2000
- Background: not provided
- Published in OECD Observer
  http://www.oecdobserver.org/news/printpage.php/
  aid/341/Alternative_futures_AD_2000-2025.html

22.2   Scope

- 2000-2025
- Focus of interest: **geopolitics**

22.3   Contents

Drivers of change (not explicitly mentioned)
- US leadership and power.
- China's attitude in world politics
- Abilities of international organisations

Three key certainties:
- Interdependence of states
- Globalisation
- Pyramid of power (military, economic, political, cultural)

22.4   Summary of six scenarios.

- <u>Unipolar Stability</u>: US remains hegemon.

- <u>Fragmented Chaos</u>: WMDs proliferate; China sacrifices too much farmland to industry ("Malthus strikes", causing uprisings); U.S. fails to lead and throws weight around to aggressively, antagonizing allies: "troubles engulf humanity."
- <u>Challenge to the hegemon</u>: China becomes aggressive and challenges US over Taiwan. Two options given. 1.China has to back down but swears never to retreat again before rival power, stepping up military spending and

prepares for confrontation in 10-20 years. 2. US pulls back. China incorporates Taiwan and starts to bully other neighbours. Washington wavers in its attempts to contain the Chinese, who believe that they will be able to also win the next round.

- <u>Bipolar Cooperation</u>: China and US have equivalent GDPs by 2025 but economies complementary rather than competitive. Taiwan and China are linked economically but distinct politically. China focuses on internal challenges (environment, food).
- <u>Multipolar Cooperation</u>: Internet bring peoples together, North-South differences narrow, new types of crops feed the world etc.
- <u>Global Governance Without World Government</u>: National governments remain, but share power with a medley of non-governmental agencies (NGOs and business). Toghether they form expanding networks of institutions to meet a wide range of human needs. UN Security Council plays increasing role in peace and security, building a rapid reaction force. "World governance is global public policy responding to the dangers and opportunities inherent in globalization."

Conclusion: Of the many potential scenarios, global governance looks the most fruitful.

22.5   Methodology used

Not made explicit

22.6   Comment

Only storylines in scenarios may be of some use, as they focus on geopolitics.

23. Outsights

Outsights Multi-Stakeholder Project
http://www.outsights.co.uk/scenariosforthepoorest/scenariosforthepoorest.pdf
Exploratory scenario

23.1   Primary characteristics

Timeframe
2030

Year of publication
2004

23.2   Scope

What could change for the poorest?

23.3   Methods

Expert interviews (30) and workshops (40 participants): brainstorming sessions.

23.4   Contents

Drivers (only made explicit in reference to the first scenario)

Economic drivers *have both pushed poor people in search of income and opportunity, and pulled them to countries that have needed labour and skills*

Demographic changes*, especially the ageing of populations in the rich countries. The latter has created job vacancies that offer immigrants the chance to gain a foothold on the ladder*

Globalisation *has given people awareness of the opportunities elsewhere,*

whilst the shift in production patterns has distributed businesses across the world. Cultural globalisation has also shaped the world of people on the move: while the American culture has been spreading its homogenising influence across the world (e.g. through its films and fast food), other cultures spread through the migration itself and the growing global diasporas

Rural to urban shift *has continued across all the developing countries. The city is the place of opportunity - rural life is the environment to leave if you can*

The shocks: Global warming has forced millions at sea level to seek refuge in the hills. Desertification has pushed people into the cities. Political repression and local wars continue to make people into involuntary refugees

'Implicit' Drivers (for scenarios 2, 3 and 4)

Development of US supremacy
EU integration process
Rise of new economies
Technological innovation & availability of technology
Globalisation
Development gap (generating insecurity)
Environmental degradation (idem)
Influence of civil societies
Public and private sector attitude shifts (related to insecurity from development gap and environmental degradation)

23.5   Scenarios

On the Move: the underlying question was how the movement of people (within as well as across borders) changes opportunities and gives greater weight to the so-called informal economy. Of the four scenarios this was perhaps the one which aroused the greatest amount of passion whilst presenting the most difficult analytical challenges

BRICs and Blocs: the rising economic and political power of Brazil, Russia India and China is not only changing the outlook for the poorest in these countries but altering the global balance of power as these countries graduate to a status rivalling countries in the so-called First World

Simple as ABC: changing the prospects of the poorest by finding a more targeted and relevant approach to the use of technology

Moral Warming: the rise of a new attitude towards global poverty, driven by individuals, the private sector, NGOs and other civil society groupings.

23.6   Comment

Focus on poverty is too limited, but the scenarios are global and show some thought-provoking and very diverse possible futures. Time-horizon is also very useful. Not very open about methodology, and only for scenario 1 are drivers clearly outlined. Implicit drivers have been derived from the scenarios 2, 3 and 4. All four scenarios contain interesting ideas about the forces shaping our future.

24. Rabobank

24.1   Primary characteristics

Organization:	Rabobank the Netherlands
Year of publication:	2003
Background:	Executed by De Ruijter Management, this is a document to give a clear image of the risks and uncertainties with regard to interest rate development. This report is part of the 'Viewing Futures' Scenario planning of the Rabobank that has developed four scenarios exploring political, socio-cultural, technological, ecological and economic trends.
Internet site:	

http://www.rabobank.com/Images/interest_rate_scenarios_tcm25-214.pdf

24.2   Scope

Time horizon:	2003-2010
Focus of interest:	Interest rates (in Europe)

24.3   Contents

Drivers of change:	- Monetary policy (of European Central Bank)
	- Inflation
	- Budgetary policy
	- Demography
	- Savings
	- Capital flows
	- Confidence

The drivers are coherent:
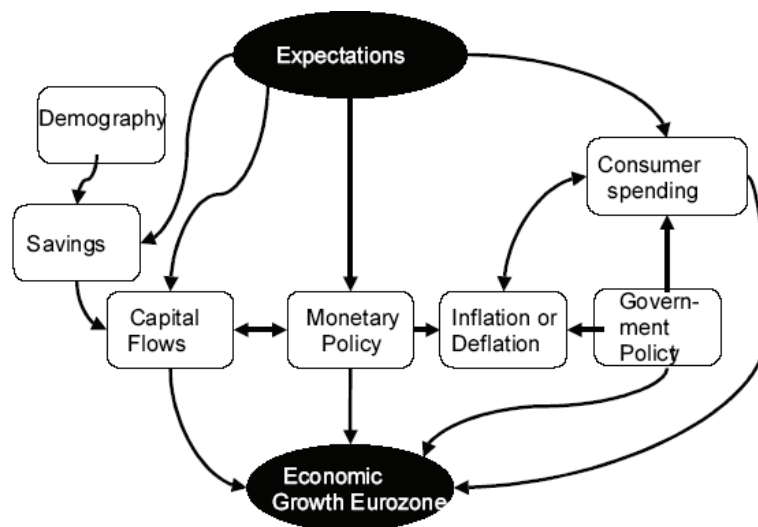
24.4   Summary of scenarios

Consolidation
The 'Old Europe'. In this scenario we are stuck in a lengthy period of economic
slump. A weak confidence climate, uncertainty about future pension provisions, the
restructuring of debt positions of companies, families and government combined
with deflation offer an important breeding ground for higher savings and a low
growth of spending and investment. Both the short term and the long term interest
rate show a further declining tendency.

In 2010 the European economy is mainly a capital extensive service economy,
whereas the ageing population structure still guarantees high savings. Governments
are faced with
budgetary deficits and consumers and companies are preoccupied with realizing a
careless old age and paying off high debts. There is minimal willingness to invest
and capital is rather put in a savings bank without any risk. Conservatism and the
perception of high risk makes capital to be invested outside the Euro zone only to a
limited extent, despite the extremely low interest rate in Europe. In 2010 Europe is
in a situation that can be compared with the sustained stagnating economy and the
low interest rate in Japan at the end of the nineties. The financial sector is having
difficult times. Structural measures to stimulate the economy fail to occur. The
economy is slowly sliding down further and further.

Volatility: 'Global volatility'
This scenario is characterized by a very strong volatility on both financial and oil
markets as well as in global trade and global politics. As a result the economic

climate cycle and the inflation show extreme results, forcing central banks to adapt the interest rates more often and stronger. Moreover the European growth potential is still hindered by a lack of structural reforms. Short term and long term interest rates follow a very volatile pattern. Also, an inverse interest structure temporarily occurs in the period until 2010.

In 2010, the media-sensitive investor changes position faster and faster, causing a growing volatility on financial markets. New technologies and the Global Financial Integration have made the world faster and more turbulent. Manic hypes are rapidly followed by depressed spirits. The tripolar currency market that had originated since the introduction of the Euro turns out to be unstable, particularly as a result of the strong growth of currency transactions. The highs and lows on nearly all financial markets are much more extreme than in 2003. The ECB could do nothing but go along by adjusting more often and more radical. Nevertheless, reforms in the real economy fail to occur, but also agitation on the financial market leads to a lower economic growth than expected in Europe. We have entered a Volatility Scenario.

Dynamics: the 'New Europe'
The first few years are dominated by a reorganization of balances by companies, families and government. The willingness to implement economic reforms is great. On top of that, the Euro zone can take advantage of the investment possibilities that are attached to the expansion of the EU to Central and Eastern Europe. In this scenario, short and long term interest rates show an upward tendency.

In 2010 Europe has become bigger and more prosperous. The expansion of the EC in 2004 with ten countries has given the European economy a new growth impulse. The agricultural, industrial and public sector in Central and Eastern Europe have been able to grow fast because of the capital from Western Europe. Western Europe also experiences a high level of prosperity as a result of the economic reorganization after 2004 and because earlier investments in e.g. ICT have allowed productivity to rise fiercely. Due to the increased demand for capital and the expectantly higher return on investments the interest rates have gone to a (substantial) higher level.

	Consolidation	Volatility	Dynamics
Economic growth	Low	Faltering	High
Confidence	Low	Variable	High
Inflation	Risk of deflation	Inflation peaks	Modest inflation
Government policy	Retrenchments	Procyclical	Reorganise and invest
Savings	High	Modest	High
Capital flows	Conservative	Volatile	Towards Eastern Europe and Russia
ECB policy	Enlargement	Slowing down or speeding up	Accommodating
Short-term interest rate	Low	Fluctuating	Rising
Long-term interest rate	Falling/low	Fluctuating	Rising

24.5   Methodology

Four stages are mentioned for scenario planning in this report: analyzing trends and uncertainties (so-called driving forces), followed by the shaping stage, the development of alternative images of the future and finally the most important stage: the strategic conversation. Interviews with various specialists at the Rabobank Group and a further study on driving forces behind the interest rate have served as the main base for the final interest rate scenarios. These driving forces were also discussed with the Balance and Risk Management Committee (BRMC) and the Interest Rate Forecasting Committee (RVC), responsible within the Rabobank organization for defining the interest rate vision and the interest rate mismatch policy. In the report the plausibility of the three scenarios is emphasized/clearly mentioned.

The different scenarios have partly been developed by interviewing various people inside the Rabobank Group. In these interviews we focused mainly on possible scenarios and on qualifying forces an/or uncertainties that rise in these scenario's. Simultaneously, an analysis of interest rate defining forces was carried out and research was done on periods in the last century in which specific interest rate movements have taken place as a result of specific events. Next, the way in which different trends, interest rate defining forces and uncertainties relate to each other was explored during a workshop with, again, various participants from the Rabobank Group. During this workshop it was also determined which scenarios will lead the Rabobank Group to new perceptions while being, at the same time,

relevant and plausible. The interviews, analyses and findings of the workshop
served as input for the scenarios called consolidation, volatility and dynamics.

24.6   Comment

The quality of the scenario seems high. But due to the specific topic of interest
rates in Europe and the relatively short-term view the value for the NC3A project is
small. The methodology used is usable as well as that it should be noticed what
important driver demography is to the economic situations in the world.

25. South Africa

25.1   Primary characteristics

General information
South Africa, Department of Science and Technology
1998
'to identify research and technology trends, requirements and strategies which will
contribute to creating safer communities and promote the security of
South Africa and its people within the framework of the Constitution, in
order to realise sustainable social and economic benefits for the country
over the next 20 years.'
www.dst.gov.za/reports/**foresight**_reports/ FORESIGHT%20CRIME%20REPORT.doc
Scope
1998-2020
Development of R&D needs to deal with crime and security. In particular, focus on
internal security.

25.2   Contents

Drivers of change/ in this report called Trends (only those relevant to defence)
Number of conflicts will decrease
The Capacity of the UN will increase and South Africa will participate in
peacekeeping operations
Force projection should be maintained in both police and armed forces
Drug and illicit arms trafficking, and terrorism will increase

Key uncertainties / certainties
- Economic growth
- Globalisation of business/institutions (both defence and crime)
- Unemployment
- Colombianisation
- Corruption
- Conflict scenarios and threats
- National security policy
- Respect for laws and CJS
- Crime rate, crime diversity
- Financial resources for dealing with crime and defence needs
- Human resources for technology
- CJS capability and capacity

- Technology
- Victims' witnesses and offenders' rights
- Ability and intent to address root causes of crime.

25.3   Summary of scenario(s)

Global Home: In line with global trends and opportunities, government embraces global liberalisation, and facilitates private sector empowerment to respond to global market forces.

Frozen Revolution: The non-implementation of government policy towards socio-economic upliftment that leaves masses dissatisfied and key players fragmented and individually focused.

Our Way is THE Way: South Africa believes in its ability to challenge the conventional route to globalisation by rallying developing countries' support for the development of a significant South-South economic bloc. This catalyses isolation by the developed world.

Innovation Hub: South Africa's comparatively developed infrastructure creates opportunities for strategic regional investment. Building on S&T skills base and knowledge generates comparative advantage and a competitive edge regionally and globally.

25.4   Methodology used

Hybrid: The research is based upon finding a strategy to realize a formulated government vision of where South Africa wants to be in 20 years. An international study is carried out by a third-party to identify trends. Following this a SWOT analysis is performed regarding South Africa's situational position, i.e. what are current strengths, weaknesses, opportunities and threats relating to its R&D sector. Four "macro-scenarios" were developed and a second SWOT was performed to analyse them. Then a survey was performed among 800 stakeholders in order to verify the results of the analysis.

25.5   Comment

Extensive methodology, but not useful for extraction of uncertainties for NATO Futures

26. Shell

26.1   Primary characteristics

Organization: Shell International (the Netherlands/ United Kingdom)
Year of publication: 2005
Background: To know the long-term predetermined trends that will
                       impact the Royal Dutch/Shell Group. The scenario is used
                       for reviewing and assessing the strategy of the own
                       company. The global scenarios have been made for three
                       decades and are made annually at the moment.
Internet site: http://www.shell.com/static/royal-
                       en/downloads/scenarios/exsum_23052005.pdf

Scope
Time horizon: 2005-2025
Focus of interest: Economy (but wider also international politics, energy,
                       technology, demography, etc.)

26.2   Contents

Drivers of change: Shell presents the Trilemma Triangle, the analytical
                       framework developed to map relations between:
                       - market incentives
                       - communities / civil society (aspirations to conform
                         and to be listened to)
                       - coercion or regulation by states

                       The three forces drive towards different objectives:
                       efficiency (market), social cohesion and justice
                       (community), and security (state). The scenarios are
                       developed in the "two wins – one loss" areas of the
                       triangle.
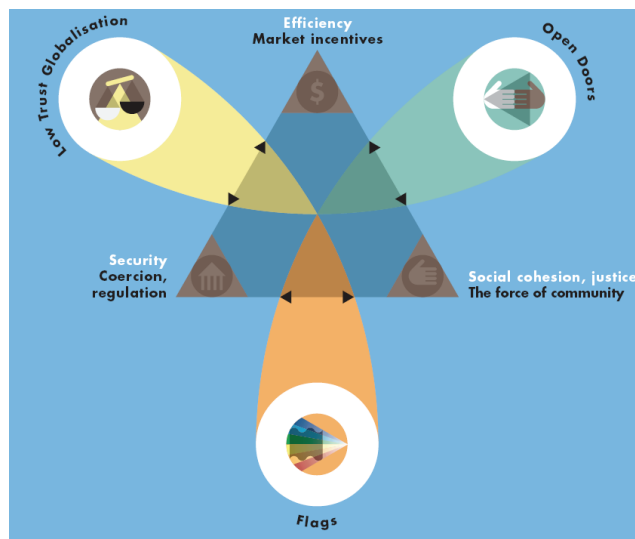
26.3   Summary of scenarios

<u>Low Trust Globalization</u>
The absence of market solutions to the crisis of security and trust, rapid regulatory change, overlapping jurisdictions and conflicting laws lead to intrusive checks and controls, encouraging short-term portfolio optimization and vertical integration. Complying with fast-evolving rules and managing complex risks are key challenges.

<u>Open doors</u>
"Built-in" security and compliance certification, regulatory harmonization, mutual recognition, independent media, voluntary best practice codes, and loose links between investors and civil society encourage cross-border integration and virtual value chains. Networking skills and superior reputation management are essential.

<u>Flags</u>
Zero-sum games, dogmatic approaches, regulatory fragmentation, and national preferences, conflicts over values and religion give insiders an advantage and put a brake on globalization. Gated communities, patronage and national s standards exacerbate fragmentation, and call for careful country-risk management.

Trends
<u>The international scene</u>
The US have become central to further integration patters within the OECD. Global governance meanwhile reflects and overarching US influence. The US will also play and increasingly central role in legal and regulatory terms. Europe

presents soft power in Central Europe, Turkey and Ukraine, yet the role of soft power is dependence on the broader global context. Forums like the IOSCO or the IASB foster convergence among domestic jurisdiction with the US as a key player and the EU quite often able to leapfrog. China is the world's manufacturing hub, redefining the terms of global competition. Having embraced WTO-rules china is now facing a broader governance challenge.

Open Doors: rejuvenated multilateralism
Low Trust Globalization: coalitions of the willing
Flags: inter-national rather than global order

Open Doors offers hopeful prospects for the Middle-East, new reforming groups offer alternatives to authoritarianism and fundamentalism. Development fosters security and possibilities for trans-Atlantic cooperation.
In Low Trust Globalization strong regimes address social needs, helped by high oil prices but there is little incentive to reform. The US maintain a regional presence with a low profile.
Flags sees a turbulent Middle East, driven by conflict. Low oil prices provide additional incentives to attempt cautious reform, but this is bitterly contested.

India can combine soft power with regional hard power. The IT services sector is not a broad enough base to achieve full scale modernization. The complexity of Indian democracy makes policy reform less strikingly effective than in China, but may well provide a more stable foundation for success.

Open doors sees that the international community takes a long-term view on trade, foreign aid and the fight against AIDS in Africa. Conditionality is bases on fundamental principals.
Low Trust globalization sees and emphasis on access to resources, to fight against corruption and efforts to deal with failed states on an emergency basis.
Flags is about "strong men", patronage, national efforts to combat AIDS, war against terror an bilateral deals.

Demography
International migrations will be the aspect of demographic change most influence by the set of incentives and constraints of the Trilemma Triangle. Open Doors is about the importance of knowledge sharing and offshore opportunities. The youth and brain drain is prominent in Flags and Low trust Globalization. In the latter, migrations are limited to meet labor market needs.

Patterns of economic growth
In open doors technological progress is rapid thanks to R & D, trade barriers are dismantled, foreign trade expands rapidly and financial markets are more integrated. In low trust globalization trade integration increases but due to security concerns and continuing institutional differences across borders this is less fast.

In Flags national barriers undermine collaborative research efforts and wider distribution of innovations. Markets remain fragmented.

<u>Energy security</u>
On the market side, three decades of de-linking of economic growth and energy consumption are giving way to strong re-linking as the largest share of new demand comes from developing economies. A new awareness that energy supply will come from unconventional energy sources and from more challenging regions. The oil demand of China will have major impacts on global demand patterns. Uncertainties in which regions and which types of technologies to invest. A search for new energy security with bilateral deals, point to point pipelines and allocating priority to digenous sources or international cooperation. China, IEA, India and OP"EC are engaged in a policy dialogue for the development and use of reserves.

<u>Climate change and biodiversity</u>
Climate change is the biggest issue in Open doors. Low trust globalization could see faster progress towards carbon efficiency as a result of a different stet of policies aimed at energy efficiency, conservation and development of renewable, notably wind. Major nuclear power generation programmes are conceivable.
In all scenarios, the implementation of the Kyoto Protocol will have taken users and producers through a 'cognitive threshold'. Carbon atoms now carry a price tag, with major developments conceivable. Biodiversity is an issue for which the energy-an-carbon industry will be expected to play a prominent role, for the sake of the communities. Of special interest is the shift from 'biodiversity' to 'ecosystem services'.

26.4   Methodology

Shell is not particularly forthcoming in "Tends, tradeoffs and choices" about their methodology. The inferred method is the 'Expert group' method. It is mentioned that "there has been cooperation with centers of excellence and contributions by eminent experts in the course of developing the scenarios, both within and beyond the corporate boundaries".
More about the people that have contributed to the scenarios can be found at:
http://www.shell.com/static/royal-en/downloads/scenarios/acknowledgement_23052005.pdf

26.5   Comment

Shell invests considerable resources into scenarios and are very 'mature' in generating scenarios. They are well known for their global scenarios and by far the biggest corporate generator of global scenarios. That is why the quality of this scenario is considered high. 'The Global Scenarios to 2025' emphasizes the

importance of security concerns and patterns of globalization. This is why this scenario can be of value for NC3A Future Worlds project.

27. UK MoD

27.1   Primary characteristics

General information

a. United Kingdom Ministry of Defence
July 2002
New Chapter of the Strategic Defence Review 1998, created after a public
discussion
Available at http://www.mod.uk/linked_files/SDR_New_Chap_Support.pdf

b. United Kingdom Ministry of Defence
December 2003
Delivering Security in a Changing World
Defence White Paper
http://www.mod.uk/publications/whitepaper2003/index.html

c. United Kingdom Ministry of Defence
July 2004
Delivering Security in a Changing World
Future Capabilities
http://www.mod.uk/issues/security/cm6269/index.html

27.2   Scope

a. Military contribution to the campaign against international terrorism abroad.

b. and c. "While the SDR and the New Chapter set us on the right course to
respond to the trends emerging in 1998, the security environment and technology
have moved on. We therefore need to adapt further our force structures in light of
our operational experience and continue the process of modernization that SDR set
in hand"

27.3   Contents

Future planning drivers:
-An expanded regional focus
-strike the right balance of capabilities for expeditionary operations to meet the
demands of our eight strategic effects
- The need to optimise our force structure to support three concurrent small and
medium scale1 operations
-The retention of the flexibility to reconfigure for less frequent large scale
operations
- The importance of the continued transformation of our forces to concentrate on
the characteristics of speed, precision, agility, deployability, reach and
sustainability.
-The importance of those capabilities which can rapidly come together to achieve
specific military effect and then rapidly adapt with other capabilities to achieve
what is required by the next operation

27.4   Summary of scenario(s)

27.5   Methodology used

In addition to routine planning, in January this year the Department set up multi-
disciplinary Service and civilian teams to examine 16 thematic workstrands, using
the policy baseline established by the Defence White Paper and focusing on the
key judgements set out above.

27.6   Comment

The drivers are primarily for defence planning. These drivers are derived from
future expectations and in that sense useful.

28. UN- the millenium project

28.1   1. Primary characteristics

- General information
  - Initited by: American Council United Nations University
  - Published in 1998
  - *The Millennium Project* was carried out in partnership with the Smithonian Institution and The Futures Group. It generated four different groups of global scenarios:
    - o Anti-Terrorism Scenarios (short term/purely narrative/limited use)
    - o A Global Normative Scenario – 2050 (idealized world; three drivers are: technology, human development and political and economic policy)
    - o **Global Exploration Scenarios - 2025**
    - o Very Long-Range Scenarios - 3000
  - http://www.acunu.org/millennium/scenarios/index.html

- Scope of *Global Exploration Scenario – 2025*.
  - Time horizon: 1998-2025 (although scenarios often conclude with remarks about the 2050 timeframe)
  - Integrated / generic scenario (combining economy, governance, social, environmental en technological factors).
  - 41 pages (html)

28.2   Contents

Key drivers of change:
- globalisation (from free trade to isolationism)
- leadership (from inspired and effective to dismal and ineffective)
- communications technology (from vibrant to stagnant)
- government participation in society (from high involvement to laissez-faire).

These four key drivers were selected by **35 experts** from a list of **eighteen fundamental drivers**:

1. Communications technology (from vibrant to stagnant)
2. Crime (from massive concern to contained)
3. Degree of globalization (from free trade to isolationism)
4. Degree of harmonization (from shared standards to ad hoc)
5. Economic competitiveness among nations and companies (high to low)
5a. Economic vitality, overall global economic activity (from high to low)
6. Government participation in society (from high involvement to little or laissez-faire)
7. Individual health (from greatly improved to deteriorating)
8. Leadership (from inspired and effective to dismal and ineffective)
9. Pollution (from disastrous to being cured)
10. Population growth (from high to low)
11. Resource availability (from abundance to scarcity) to year 2025
12. Rich/poor gap-within and among countries (from widening to narrowing)
13. Social focus (from individualism to community)
14. Technology (from vibrant to stagnant)
15. Terrorism (from major concern to benign)
16. The status of women (from improving to stagnating)
17. Threats to global security and/or quality of life (high to low)
18. Wars (from volcanic to quiescent)

28.3   Summary of four scenarios

Cybertopia **(Computers and communications make a better world)**
Optimistic scenario of open trade and continuing globalisation, low government involvement, intensely developed and vibrant communications and high security. Democracy flourishes and the explosive growth of internet accelerates globalisation. Developing countries profit from internet and telecommunications technology while population growth slows down globally. Cyberspace reduces energy demand and although the environment is still threatened there is a strong push for renewable energy resources.

The Rich Get Richer **(Intense competition gets out of hand)**
This is a world of open trade, low government involvement, intense communications and low security. Income inequality grows between rich and poor countries. Governments perform poorly and market takes over certain previously public functions; corruption abounds. Then wars break out, especially amongst developing countries. Uprisings explode, triggered by tensions associated to migrations, water shortages and environmental deterioration. Meanwhile, rich countries keep prospering.
Change is brought about when multinational corporations recognize that growth can continue only if markets develop, which requires the development of poor countries. By 2025 global warming stimulates corporations to invest massively in

alternative energy systems. By 2050, living conditions have improved for the general world population.

A Passive Mean World **(Things go to hell; try to fix the problems but cannot; environmental priorities suffer)**
This is a world of isolation and barriers to trade, stagnant communications but high government involvement and high security. Unemployment is the main problem, causing political unrest. Technology development decelerates. The development towards democracy stagnates and there is huge distrust in governments. Trade wars erupt between blocks and protectionism is rampant. Only China and India develop at a sustained pace. Elsewhere peace and security are rare, terrorism is on rise, wars erupt and international institutions crumble. In this environment people start to turn towards faith and religion for help and start to retreat in more closed communities.

Trading Places **(The emerging countries flourish; the rich stagnate)**
This is a world of open trade, low government involvement, intense communications but low security. Asia and China in particular booms while EU and US experience sluggish growth. For most people life is hard compared to the past, but still bearable. By 2025 China is dominant regional military power. The environment suffers as energy demand doubles by 2050. By mid 21st century Western economies manage to rebound, but they have lost their military and economic clout.

28.4   Methodology used

Building the scenarios:
- *"Expert groups"* predominant method used. The project is described as "a global participatory futures research think-tank of futurologists, scholars, business planners, and policy makers who work for international organizations, governments, corporations, NGOs and universities." Experts were approached both by questionnaire and by using web forums.
- Permutations of the extremes of the four highest ranking drivers were used to form **sixteen possible scenarios**, of which four were considered the most interesting for further development.
- A characteristic **matrix** was constructed to provide the essential outline of the four explorative scenarios' content.
- The next step was quantification through the **use of global models**, which were used to help assure consistency. However, **a decision was made to have the scenario drive the model rather than vice-versa**.

The use of models:
- Regular model-based global studies (scenarios are derived based on model output):

Implicit scenario → Exogenous assumptions → modeling → Scenario construction (based on model runs)

- In *Millennium Project* models were used to add content to scenarios: **Lookout panel developments and policies + scenario axes → Scenario Construction → Exogeneus assumptions → Modeling → Scenario Quantification (based on model runs)**

28.5 Comment

- Thorough methodology: exploratory / descriptive scenario; making use of global models; both qualitative and quantitative.
- The results of the decision "to have the scenario drive the model rather than vice-versa" need further exploration.
- The content of the scenarios appears to follow well know patterns (contrasting worlds). It is not clear why AC/UNU project expanded the 2025 timeframe to 2050, adding a positive note to the two of the scenarios.

29. UNAIDS

Expert group (50 participants), using image of hippopotamus (deep causes, not only focus on obvious, everyday factors and events, i.e. not only on the head, the only visible part, of the hippopotamus but on the entire animal)

UNAIDS has followed the following steps in making their scenarios:

May 2003	Sept 2003	May 2004	Jan 2005
Orientation Workshop	**Scenario Building Workshop**	**Scenario Affirmation and Implications Workshop**	**Scenarios Launch & Rollout**
Interviews and	**Synthesis, analysis, write-up, presentatio**		**Strategies, new initiatives,**
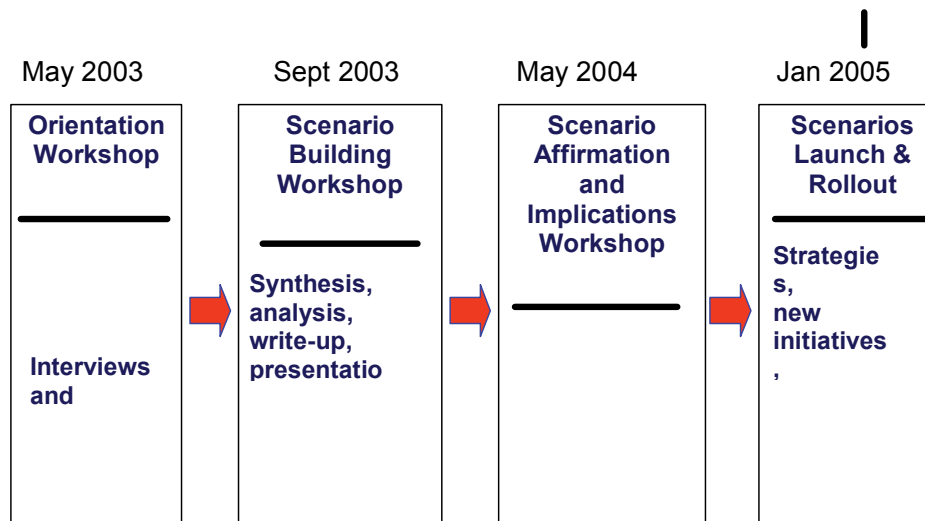
29.4   Contents

The scenarios project was based on two key assumptions:
• That AIDS is not a short-term problem— whatever is done today, it remains inevitable
that AIDS will still be affecting Africa 20 years from now. However, it remains uncertain in
what ways, and by how much, Africa's future will be shaped by AIDS.
• That decisions taken now will shape the future history of the continent.

Predetermined Forces/Certainties

Africa's geographical location, its landmass and varied climates
Diversity of ethnicities and cultures
Population growth: 1,2 billion in 2025
HIV transmitting mechanism remain the same
Increasing urbanisation & changing family structures
Religion remains important

Drivers

▪ **The growth or erosion of unity and integration**
Will the next 20 years be characterized by greater cohesion and integration, or greater contestation and fragmentation?

▪ **The evolution of beliefs, values, and meanings**

Will the next 20 years be characterized by respect and tolerance of beliefs, or contested values and intolerance, and how might beliefs change?

▪ **The leveraging of resources and capabilities**

Will the next 20 years be characterized by the leveraging of additional resources and capabilities, or will there be depletion and wastage of resources and capabilities?

▪ **The generation and application of knowledge**

Will the next 20 years be characterized by shared and effective learning, or will knowledge generation be neglected and contested?

▪ **The distribution of power and authority**

Will the next 20 years be characterized by greater commitment toshared power, or will power be concentrated and contested? Will state power and traditional sources of authority be aligned, or in conflict?
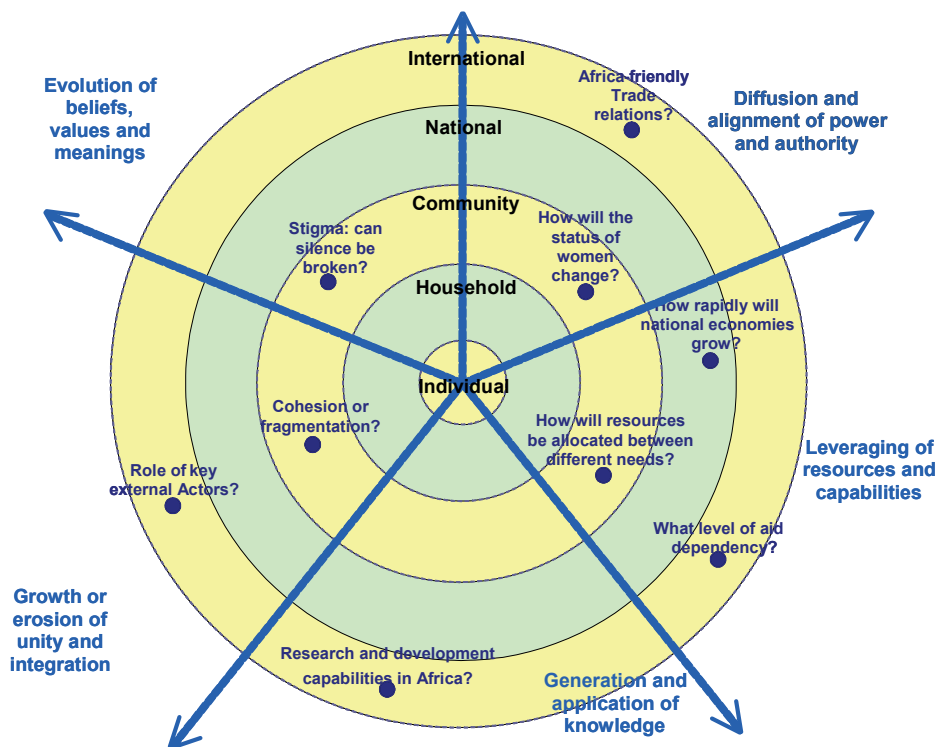
Shocks and Radical Discontinuities

War and conflict
Collapse of ecological systems

Famine
Episodic or emerging diseases
Global, political and economic shocks

29.5 Scenarios

1. 'Traps and legacies' extrapolates current trends until 2025.
'Traps and legacies' is a story in which Africa as a whole fails to escape from its
more negative legacies, and AIDS deepens the traps of poverty, underdevelopment,
and marginalization in a globalizing world. Despite the good intentions of leaders
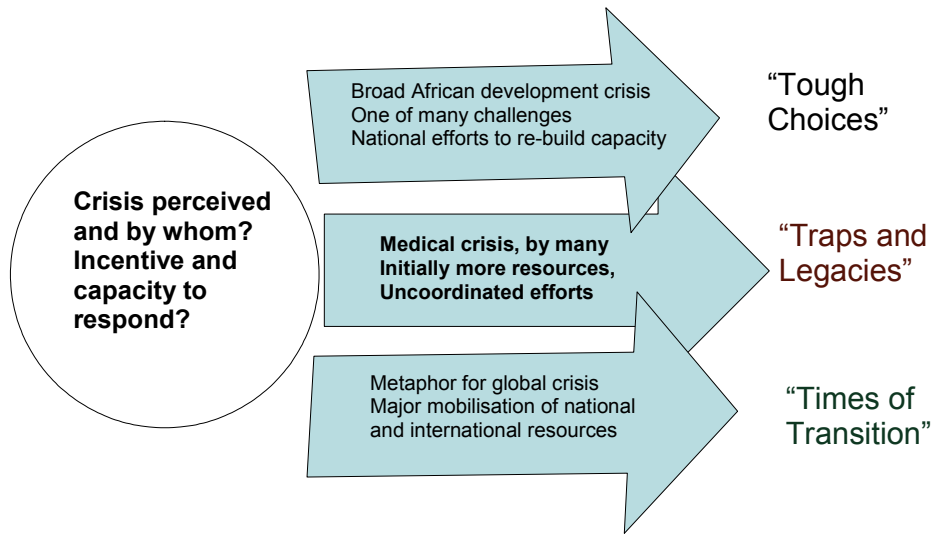and substantial aid from international donors, a series of seven traps prevent all but
a few nations or privileged segments of the population from being able to escape
continuing poverty and continued high HIV prevalence.

2. 'Tough choices' applies the trajectory of the most successful response to date
(Uganda), adjusted for respective national levels of the epidemic.
'Tough choices' tells a story in which African leaders choose to take tough
measures that reduce the spread of HIV in the long term, even if it means
difficulties in the short term. This scenario shows that, even with fluctuating aid,
economic uncertainty, and governance challenges, collectively, Africa can lay the
foundation for future growth and development, and reduce the incidence of HIV.

3. 'Times of transition' illustrates what might occur if a comprehensive prevention
and treatment response were rolled out across Africa as quickly as possible.
'Times of transition' is the story of what might happen if all of today's good
intentions were translated into the coherent and integrated development response
necessary to tackle HIV and AIDS in Africa.

Broad African development crisis
One of many challenges
National efforts to re-build capacity

"Tough Choices"

Crisis perceived and by whom? Incentive and capacity to respond?

**Medical crisis, by many
Initially more resources,
Uncoordinated efforts**

"Traps and Legacies"

Metaphor for global crisis
Major mobilisation of national
and international resources

"Times of Transition"

29.6   Comment

Good time-horizon, but limited in theme. Nevertheless, it considers general, more global drivers, certainties and shocks that may be useful to consider for a global security scenario. Also, the methodology seems sound and useful and the three-fold scenario could be used as a model for other scenarios exercises.

30. Which World

Which World?
http://mars3.gps.caltech.edu/whichworld/explore/scenarios.html (companion to the book)

30.1   Primary characteristics

Year of 'publication'
1998

Timeframe
1970-2050

30.2   Methods

Trend analysis + qualitative analysis & narrative. The book draws on the work of the 2050 Project, an earlier joint effort of the World Resources Institute, the Brookings Institute, and the Santa Fe Institute; on the work of the Global Scenario Group, coordinated by the Stockholm Environmental Institute; and on data from the World Bank, United Nations agencies, and other sources. The website features an online discussion forum on which the analyses, trends and scenarios on the site can be discussed.

30.3   Contents

Drivers

Demographic (population)

Economic (income, economic growth)

Environmental (pollution, land/water scarcity)

Social and Political (literacy, democracy)

'Implicit' Drivers

Political/Ideological choices

Public attitudes
Private sector attitude shifts
Globalisation - of free market; information etc.
Transforming development gap
Environment – health & productivity; global warming disasters
Development of civil society – citizens' groups, voluntary organisations, NGOs.

30.4   Three Scenarios

Market World reflects a vision of the future that is widely held today. It assumes that free markets, private enterprise, and global market integration are the best way to increase prosperity and improve human welfare. Economic reform, privatization, and deregulation are, in this view, the key to the future.

Fortress World, on the other hand, focuses on the potential of unattended social and environmental problems and the growing gap between rich and poor to diminish social progress and doom hundreds of millions of people to lives of poverty and deprivation. It foresees the likelihood of wiperead degradation, social instability, rising conflict--and the possibility of violence and chaos, of a world divided against itself.

Transformed World is an optimistic vision of the future, one in which social and political--as well as economic-- reforms create a better life, not just a wealthier one. It assumes that human ingenuity and compassion can extend opportunity to all of humanity. And it points to tentative changes, already underway, that may presage such a transformation.

30.5   Comment

Useful, good theme, scope and time-horizon; joint effort of many expert organisations. Would be good to use the book instead of the website (which is only a spin-off of the book) if more specifics are needed. Possible critical note: from the website it seems that statistical trends play an important part in the scenario building process, but how important exactly does not become clear. Perhaps the book is more explicit about this.

31. WBCSD

31.1   Primary characteristics

Organization: World Business Council for Sustainable Development
                           (Participating companies include: 3M, GM, IBM, Johnson
                           & Johnson, Phillips, Procter 7 Gamble, Shell, Sony,
                           Volkswagen, Xerox, etc.)
Year of publication: 1997
Background: The scenarios are made to illustrate a number of plausible
                           routes forward that pose challenges for business.
Internet site:

                                   http://www.wbcsd.ch/web/publications/explorings
                           cenarios.pdf

31.2   Scope

Time horizon: 2000-2050
Focus of interest: Sustainable development (in Economy & Technology,
                           Governance& Equity and Ecology & Demography)

31.3   Contents

Drivers of change: -   guidance to market / extension of market
                           -   resilience of global ecosystem (resilient/vulnerable)

                           They mention the driving forces that shape the global
                           business environment and that will persist in any scenario:
                           -   The New
                           Social and technological innovations, new countries, new
                           businesses, new partnerships, NGOs and the media.
                           -   The Many
                           Increase in population, consumption, diversity of actors
                           -    The Connected
                           Close connection to fellow human beings and
                           environment. Inter-connectedness, interlinked complexity,
                           global "techno sphere".

                           The point of divergence of the scenarios arises when
                           human actors respond in varying ways to the challenge of
                           sustainable development.

A focus is on differences in scenarios in:
- Economy & Technology,
- Governance& Equity and
- Ecology & Demography

31.4   Summary of scenarios

FROG
First Raise Our Growth. Many nations experience a fair degree of economic success, and for almost all, economic growth is the major concern,, with sustainable development acknowledged to be important, but not pressing. As environmental NGOs continue to demand enforcement of standards that have been set in global summits, those nations who are striving to develop argue that if the developed nations insist on raising environmental standards, they should Firstly Raise Own Grown. Indeed, in this scenario, some nations leapfrog from underdeveloped status to bench marker in particular areas of technology.
Narrow economic myth: local focus, weak global cooperation, insufficient response to ecological problems, ecological vulnerability, missed signals, ineffective institutions, shortening horizons.

GEOpolity
This scenario begins with a succession of signals in the first two decades, some real, some imagined, that an environmental and social crisis looms. The prevailing "economic myth" is increasingly viewed as dangerously narrow. This is particularly true in Asia, where rapid economic growth has meant that corners have been cut and traditions lot. Because many institutions, especially governments, have lost credibility as problems-solvers, people expect something from the new centers of power – multinationals.
Competing myths: non-market values shape development, new governance forms, and global standards. Neither governments nor business are effective in providing leadership. Global consensus on sanctions and more direct control of the market.

Jazz
In the world of Jazz, divers players join in ad hoc alliances to solve social and environmental problems in the most pragmatic possible way. The key not is dynamic reciprocity. This is a world of social and technological innovations, experimentation rapid adaptation, much voluntary interconnectedness, and a powerful and ever-changing global market.
Evolving Economic myth: transparency, market and technology innovations, alliances and social experiments, government only active at local level with ad hoc global institutions to solve particular problems, sustainable development as "best practice". NGOs, governments, consumers and businesses act as partners or fail.

31.5   Methodology

Guidelines are given for scenario planning with the following steps:
- Clarification of the theme/focus
- Information gathering on main areas
- Identify and analyze driving forces
- Contemplate a stet of plausible storylines
- Structuring, identify interconnections and define scenario logics

This is done in a team of participants with a wide range of views.

31.6   Comment

The quality is probably quite high considering that people from Shell and universities have been making these scenarios. The topic of sustainable development is not really correlated with the NC3A future project although there are some interesting issues in the power division between governments and market.

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Appendix B   CVs of Key Participating Staff

Drs. S.H.A.M. de Spiegeleire
Stephan De Spiegeleire is a Senior Policy Analyst with TNO Defence, Security and Safety.
He studied Slavic Philology (B.A., K.U. Leuven - 84), International Affairs (Master's degrees from the Graduate Institute for International Studies, Geneva – 86; and the School for International and Public Affairs of Columbia University, New York - 87). He is working towards his Ph.D. at the Political Science Department at the University of California at Los Angeles.
Stephan started his professional career at the RAND Corporation in 1989 and worked there for nearly 10 years: 5 years in Santa Monica and almost 5 years in Leiden, The Netherlands, where he last served as Deputy Programme Director for Defence and Security (2000-2005). His work at RAND was interrupted by stints at the Stiftung Wissenschaft und Politik (Ebenhausen, Germany – 93-96); and the Western European Union's Institute for Security Studies (Paris, France – 96-99).
From a start as a Soviet specialist, Stephan has branched out into a number of different directions, all related to international security policy: European security and defence policy; European defence transformation; and developments in the post-Soviet sphere (with a continued strong interest in Ukrainian and Russian foreign and security policies; as well as more recently also the Southern Caucasus). He has published widely in all these fields, currently most actively in the application of network-centrism to national and European security policy in the broader sense (defence, external action and homeland security). His last activity at RAND Europe was a study for the Dutch Ministries of Defense, Foreign Affairs, Interior and Justice on how various governments have adjusted their policies and structures in light of the new security environment. He is also the author of a major scenario study on Russia, done for the Dutch Ministry of Economy.
Currently, Stephan is a senior policy analyst in the (Business Unit 2, Policy Studies, Operational Analysis and Information Management at TNO Defence and Security) working primarily in the areas of network-centrism, European defence transformation, and European Homeland Security.

F.F.A. Kleyheeg MIM
Frans Kleyheeg has 10 years of experience with air and passive defence analytical studies and studies concerning safety and security, including a substantial amount of his 24 years of service in the Royal Netherlands Air Force (RNLAF). Since May 2003, Mr Kleyheeg, who participated within the North Atlantic Treaty Organization (NATO) feasibility study (FS) on Active Layered Theatre Ballistic Missile Defense (ALTBMD) from the beginning, has served as deputy programme manager for the SAIC Team that executed the ALTBMD FS.
From September 2000 to the present, Mr Kleyheeg has been a project leader and senior advisor for national and international studies concerning safety, security, and technology and has provided area expertise for decision support as an analyst and

advisor on several defence white papers. He was project leader of a multinational European Union (EU) study concerning dual use of systems and technology and was the project leader of an advanced technology survey and assessment for the Ministry of Defence (MoD).

While Mr Kleyheeg was with the RNLAF, he was a staff officer working on international plans and co-operation, with a focus on manpower planning and capability packages at the Defence Staff from 1996 to 2000. At NATO headquarters, he was the Netherlands representative to the NATO Manpower Study Team, where he was responsible for product quality assurance and configuration management of the manpower database of approximately 12,000 billets. This team, working directly under the responsibility of the chairman of the Military Committee, developed the details of the NATO command structure. After the NATO countries accepted the proposals, Mr Kleyheeg was responsible at the national level for negotiations regarding the positions in the new NATO Command Structure. He participated in several ad hoc working groups concerned with the NATO force planning process and with other committees.

Mr Kleyheeg was head of the Information and Business Management Section at RNLAF headquarters from 1993 to 1996. Prior to 1993, Mr Kleyheeg was a staff officer in the Personnel Directorate at RNLAF headquarters. This work gave him a thorough knowledge of financial labour conditions. Through this position, he became involved in computer sciences and information management. Because of his knowledge of both finance and information management, Mr Kleyheeg was appointed as RNLAF project leader for the development and implementation of a new payroll system for the entire Netherlands armed forces (more than 60,000 personnel) and gained experience in managing large teams. At the same time, he followed a postgraduate course in information management at the University of Tilburg and the Washington University in St. Louis (USA).

During his early years of military service, Mr Kleyheeg held several operational appointments, ranging from fighter controller to officer for active ground defence. Later on he was appointed as deputy commander of the RNLAF Instruction Training Centre.

Mr Kleyheeg is the author and co-author of several publications on NATO and security. He is also a free-lance trainer of social skills and crew resource management at a training school for airline pilots.

J.G.M. Rademaker MTL

Michel Rademaker was born in Arnhem in 1962. He graduated at the Royal Military Academy in Economics and Logistics in Breda, The Netherlands in 1987 and became Master of Tranport and Logistic Management at TIAS Business School, Tilburg, The Netherlands in 1999.

He is working at TNO Defence Security and Safety sinds 1998 as a Senior Strategic Policy and Management analist. Before that he was military officer in several operational functions, staff officer in Army and Interservice commands and served in the UNPROFOR mission for six months in Former Yougoslavia (Croatia) in 1995.

He was programme leader, did consultancy and gave training:
Workshops on Long Term Defence Planning & Procurement for MoD Bulgaria;
Multi-national Technology Assessment and Workshops;
Knowledge Management for the Royal Netherlands Army;
Policy survey on the Netherlands Security situation for The Netherlands Secretary
Generals of the Departments of Internal Affairs, Justice, Foreign Affairs and
Defence;
New Military Operational Logistic Concept 2006 for the MoD Defence Staff;
Business managament issues as Management Information, Performance
Management and Quality models like INK (EFQM) for the Ministery of Defence
Directorate General Economics and Finance and e.g. Royal Netherlands Army;
ICT Innovation board Defence.

The mean focus of his work is on Strategic Defence and National Security and
Intelligence issues.

He is one of the founding fathers and Secretary of the Clingendael Centre for
Strategic Studies (CCSS).

Drs. U. Mans
Ulrich Mans is working at the Netherlands Institute of International Relations
Clingendael in the Clingendael Security and Conflict Programme (CSCP) were he
gives Training Management and Research on International Mediation sinds February
2004. Before that he was employee of the International Crisis Group Brussels, Belgium
working at the Africa Division as Assistant to the director Policy Analyses on African
Conflicts. Until May 2002 he worked at the Africa Institute of South Africa Pretoria,
South Africa were he did Field Research in the DR Congo & Rwanda. Before that in
the same year he worked and studied at the Instituto de los Conflictos y de la Paz
University of Granada, Spain in the European Student Exchange Programme. His field
of concentration for Research was UN Peacekeeping. From February 2001-August
2001 he worked at the Institute for Development Studies Uganda Martyrs University,
Uganda. Major fields of interest were African Public Policy and African Renaissance.
He started his career as student at the Catholic University Nijmegen the Netherlands on
Development Studies at CIDIN, the Centre for International Development Issues.

Prof. dr. R. de Wijk
Director of the Clingendael Security and Conflict Programme (CSCP) which also
comprises the Conflict Research Unit (CRU) since January 2005, when the
Departments of Training and Research of the Clingendael Institute were integrated
in three new thematic Programmes.

In 2003 Dr. Rob de Wijk became the Director of the Clingendael Centre for
Strategic Studies. The Centre is a joint venture between the Clingendael Institute of

International Relations and the Netherlands Organisation for Applied Scientific Research, (TNO).

He is also professor in the field of International Relations at the Royal Netherlands Military Academy, Breda (1999) and professor Strategic Studies at the University of Leiden (2000). In addition, he is a member of the National Defence Research Council of TNO (1993).

Rob de Wijk started his career in 1977 as a freelance journalist. In 1980 he became editor-in-chief of a publishing company specialising in journals and scientific publications. From 1985 to 1989 he worked at the University of Leiden's political science department. He was a lecturer in international relations, in particular international security.

In October 1989 Rob de Wijk was appointed Head of the Defence Concepts Division of the Defence Staff at the Netherlands Ministry of Defence. He advised the Chief of the Defence Staff in matters relating to strategic plans and policy. In September 1997 he acquired a secondment with the Clingendael Institute for International Relations in The Hague to study the military aspects of international security.

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