

1.14 Effective Country Adaptation to Threats/Challenges and Opportunities: A Strategic Innovation Policy & National and Government Strategy Perspective

1.14.1 Background

New threats & shocks (and Opportunities) in their Global and Domestic Environment increasingly pose significant Challenges for countries to adapt to. Examples are Disruptive Technologies (Christiansen 2002) such as Artificial Intelligence, Deep Learning, Robotics and 3D Printing with negative implications concerning continued Unemployment, Income Inequality (Picketty 2014, 2015), Inclusiveness & Social Resilience and even Personal Security; Climate Change; wars + new lethal weapons + Data Security/Cyber vulnerability; new health threats/challenges, "System Failures" derived from enhanced complexity of economic, social, political and legal systems and associated difficulties (both in ascertaining and applying adequate regulatory systems); weak & ineffective government systems due to 'short termism' and 'politics' or weak capabilities and/or out-of-date policy perspectives or misplaced 'objectives', etc.

The above Threats plus the enhanced importance of Radical/Type 2 Uncertainty (Taleb 2007) pose new strategic challenges which countries (and Governments) find difficult to adapt to i.e. the outcome being "weak CA".

1.14.2 Country Adaptation (CA) and the CA System

Effective Country Adaptation to such (and other) changes is key for the steady well-being of its inhabitants. It involves much more than reasonable performance today in areas such as GDP/growth, Inflation, Debt Reduction and Productivity; and is likely to be a much more complex affair than an effort which strongly focuses on Macro-Economic policies which underestimates the criticality of an evolving set of specific/structural investments and associated policies required to confront the above Threats and Challenges and/or to deter future reductions in GDB and citizen welfare [for an extreme example of avoiding such inter-temporal System Failures, see Finland's policies with respect to nuclear waste, The Economist, April 2017]. It follows that –over and beyond Macro-Economic ones, a Country Adaptation approach should consider Overarching National Goals (ONGs) [and associated Priorities/Priority areas] such as or related to 'Employment' & 'Inclusiveness and Social Resilience'; 'A Flexible/non-fragmented Government/Political System' who supports 'Liberal Values' & 'Justice for all Citizens'; 'Climate Change', 'Minimizing the impact of Floods & Draughts' and 'Avoiding & Confronting Famine'; 'Avoiding/Dealing with New Conflicts and Data/Cyber Security'; 'Confronting New/Existing Health Hazards', 'Updated Education and Training'; etc- some of which might not be easily measurable.

In the paper I refer to a CA function and a CA system and aspects of their links with 'Global Adaptation'. I argue here that effective "Country Adaptation" to Threats/Challenges/Opportunities should involve or should consider the following-

- Country Vision and a related set of frequently inter-linked Overarching National Goals (ONGs, which might change when the country is confronted with new Threats/Challenges/Opportunities);
- Each ONG should be linked 'downstream' to one or more knowledge-intensive & policy relevant Strategic Priorities belonging to an evolving set of N&GS;
- A Strategic Priority [whether 'National' or 'Government', and in contrast to a simplistic and not fully developed 'Nominal' Priority] is a Body of Knowledge involving Background, Narrative & Past Events, Forecasts & Future Scenarios; Links with other Strategic Priorities; the Implementation Profile (including key issues and decision points), and the associated Recommendations and 'General Policy Objectives'; and

for each Government Priority

- 'Downstream' Policy Design and Implementation on the Ground by policy makers-- which should be consistent with priority-setters' Implementation Profile and General Policy Objectives (a fact requiring close priority-policy coordination).

Throughout a distinction should be made between i) N&GS-"K" (the 'Knowledge Component' of a N&GS resulting from 'upstream' priority formulation or priority setting in what could be termed the country's 'Strategy and Policy' System, and ii) N&GS-"I" (its priority 'Implementation Component' "downstream" in terms of policies-including Strategic Innovation Policy(SIP)- on the ground').

Dynamic Sequence 1: Creation of a Simplified CA System³

Threats/Challenges/Opportunities--> Identifying and formulating a relevant set of ONGs->

->Autonomous Formulation of a N&GS-"K" by priority setters ->

General Policy Objectives (for each Government Strategic Priority)--> ->

->Priority-Policy Coordination + mutual feedback (Pri. Setters and Pol. Makers) ->

->(Specific Policy Design & Implementation on the Ground [N&GS-"I"]->

->Country Adaptation

The above sequence describes-in a very simplified way- 'creation' of a CA System in response to a particular set of new Threats/Challenges/Opportunities. A related sequence would describe the Strategic Re-orientation which follows important New Threats/Challenges/Opportunities (actual or expected/forecasted), the outcome being a 'modified' CA system. It is likely that both (but especially the former) require at least a measure of 'Re-invention of Government'.

Close interaction and coordination between (autonomous) priority setters on the one hand and policy makers on the other; as well as good inter-Ministerial coordination --are key both for creation of a N&GS and for any 'Strategic Re-Orientations'. Moreover, creation of a N&GS and its implementation on the ground require Government to re-invent itself (similarly with significant 'Strategic Re-Orientations' situations triggered by important changes in the set of Threats/Opportunities). While a 'Flexible Political System' would be an asset it should be complemented by another ONG entitled "A Strategic and Entrepreneurial Government (and/or State)"⁴. Implementing such re-orientation 'on the ground' might require an important set of new and coordinated policies e.g. Strategic Innovation Policy (SIP) and new patterns of 'policy interconnectedness'.

1.14.3 Priority-Related System Failures (SFs)

From the perspective of this paper, Venezuela and Argentina are examples of significant CA-related System Failures due to absence of (or imperfections in) their evolutionary path during the last decade or two. Their dynamic weaknesses (when compared with Dynamic Sequence 1 above or Dynamic Sequence 2 below⁵) seem to have resulted both from 'failed policies' resulting both from a very limited view of the requirements for effective Country Adaptation to new Threats/Challenges/Opportunities and from weaknesses in their social, economic, and political systems.⁶ Other countries including some in Europe might have experienced CA-related System

³ For expositional reasons the Dynamic Sequence that follows ignores feedback effects and other non-linearities as well as the impact of 'exogenous' events such as new Threats/Opportunities (some of these will appear in the full paper). It also ignores the possible links with SIP as well as interactions with the political process (which also appear in the text).

⁴ This links with a key ONG entitled 'A Strategic and Entrepreneurial Government' which is related-but not identical-with the Entrepreneurial State of the literature (Mazzucato 2012, Bonvillian several articles). I also contend that frequently Strategic Innovation Policy could play important roles (both 'direct' and 'indirect') in the above processes e.g. by reducing the risks of CA-unfriendly 'political fragmentation' in response to sharp increases/changes in the set of Threats/Challenges facing the country.

⁵ At least in relation to the general conceptual framework (rather than the 'specifics') of such Sequences

⁶ Other countries or 'countries in the making' which seem to be in or close to a Valley of Death (which-due to Path Dependence, may be very difficult to overcome), will be mentioned in the main text of the paper (such a Valley of Death may be the outcome of continued non CA behavior).

Failures. A System Failure in Israel relates to its political un-willingness to significantly improve and extend Education and Training (especially to and for the poor who represent a high proportion of overall population by OECD standards). Another is its failed response to new opportunities for achieving peace (see among others Y. Dror's seminal articles in Israel's 'prime' newspaper, 'Haaretz'). This paper will focus on-and provide between ten and twenty examples of- 'priority-related' ['Strategic']System Failures spanning a number of countries and areas.

Note that this paper's view of System Failures leading to 'failed policies' derive from policy systems which—due to 'politics', non-awareness of the new requirements for policy making, 'corruption' or 'rigidities in the Government/Political Systems'--are not 'strategic' or 'strategic enough' (see N&GS-"K" and N&GS-"I"). This includes not seriously considering (i) Inter-Priority links ('upstream in the country's 'Strategy and Policy System')and ii) 'policy' inter-connectedness patterns and links ('downstream' in such a System).

This paper also argues that frequently, an important component of a 'friendly' CA system is a shift to Strategic Innovation Policy (SIP).

1.14.4 Policy Inter-connectedness and its contribution to Country Adaptation

Searching for and implementing effective policy inter-connectedness patterns may be critical nowadays e.g. as part of the response to the growing Unemployment resulting (or which may in the future result from) AI, outsourcing, and other factors such as changes in the competitive advantages of key industries or sectors. Over and beyond traditional policies such as wage flexibility and lowering the cost of employing and firing workers [and some Vocational Training, which not always is sufficiently updated], a 'policy inter-connectedness' view will also consider other policies which overall enhance 'Inclusiveness and Social Resilience' including through positive impacts on Employment. Thus side by side with policies which directly focus on creating new jobs, other indirect impacts may result from continuously updated 'Vocational Training Policies', 'Industrial & Innovation Policies' directed to upgrade existing (or create new) sectors/industries; enlightened 'support of SMEs and entrepreneurship'; 'Pre-school learning and improved Educational methods' (including personalized learning and adaptation to different ethnicities), etc. And last but not least, 'Empowerment of the less fortunate members of society', including the poor and immigrants (SIP II). Needless to say their success might contribute to creating the political conditions for the continuation of CA policies in the future.

A key issue is the political feasibility, willingness and capacity of Governments to undertake the CA policies mentioned above (as well as others that have not been mentioned) such as policies associated with 'Health', 'Housing', 'Personal Security,'etc.

SIP II deals with 'innovative' & integrated provision of Government Services (preferably without intermediaries) in numerous areas such as Health, Education, Subsidies/Loans & Advice, etc. Such services would be specifically directed to a variety of different socio/economic/ethnic groups including Immigrants (where their easy access could-in certain circumstances-make such services more effective from an immigrant absorption point of view). Their CA role may also be indirect since--by dealing with Unemployment and thereby contribution to avoiding the 'Political Fragmentation' that may follow new shocks/threats it might set the base both for continued Strategic Re-Oriented and for the steady implementation of CA friendly policies.

1.14.5 More on Strategic Innovation Policy (SIP)⁷

Over and beyond Traditional Innovation Policy which focuses on supporting 'technological innovation' undertaken largely by and for market forces in the presence of Market Failure⁸, Strategic

⁷ I focus on SIP II and SIP III only, since these seemed to have been least 'recognized' by what could be termed 'Traditional Innovation Policy'.

Innovation Policy also supports 'social/services' innovations by and/or for other agents (including individuals & civil society organizations such as NGOs) directed to empower the less fortunate members of society(SIP II) as well as Strategy & Policy/services innovations –including organizational and institutional innovations--by and/or for public sector agents or organizations including the Government itself (SIP III).

A small sample of Types of innovation and Areas supported by SIPII and SIP III follows:

1. 'Creating the Institutional and organizational underpinnings for an autonomous, knowledge-intensive process of setting National and Government Priorities by newly formed entities without (or with minor) 'political interference (including likely "Strategic Re-Orientations" dictated by new Threats/Challenges/Opportunities)'(Type);
2. Innovation support directed to facility the process of priority setting as well as identification of patterns of inter-priority links (Area);
3. Innovations in Management, Organization and Institutional set-ups both of/for firms & market forces & for Government entities such as Secretariats/Ministries/ Policy Agencies (Area);
4. Enhanced access, enrichment and overall coordination of Government services tailored & directed to individuals & socio-economic/ethnic groups as well as to civil society organizations(Area)
5. Promoting Visualization, 'Qualitative' Pattern identification, Super-forecasting (see Tetlock and Gardner 2015) and Scenario Building & analysis of alternative futures (Type);
6. Techniques and procedures for 'robust' policymaking under conditions of strong and even Radical/Type 2 uncertainty, see Lempert 2013 (Type) (Area); etc
7. Innovations supporting Focused Search, Identification, Classification and Updating of inter-priority links and policy inter-connectedness patterns (Area); etc.

Most if not all the 'Social/Services' innovation types are either non-physical or the non-physical part is key. They include e.g. information, various types of "routines" (see Nelson and Winter 1982), and Algorithms & Software among others. These and other innovative 'technologies/techniques' underlying SIP and SIP Types could (or might increasingly) rely on Artificial Intelligence(AI), Deep Learning, Big Data, Neural Networks and Augmented Reality.

Note that a very important user of SIP would be the Government who would be 'providing (through SIP II) & 'receiving' (through SIP III) innovative services' in the context of Re-inventing itself with the aim of enhancing its role in continued CA (SIP III).

Dynamic sequence 2 which follows complements Dynamic Sequence I by focusing on the possible roles of SIP II and SIP III on effective CA.

Dynamic Sequence 2: Impacts of SIP II and SIP III on CA/Strategic Re-Orientations⁹

New Threats/Challenges-→SIP II→"Improved CA-friendly Political Conditions"

→ SIP III *: *Institutional & Organizational Changes* →SIP III a →

→N & GS-"K" (*"Strategic Re-orientation -knowledge component*) →

⁸ While Market Failure was typically associated with business R&D there were other technology-related functionalities associated with MF such as engineering, design and startup of new process equipment

⁹ Future work will enrich the type and impacts associated with Dynamic Sequences 1 and 2 by considering feedbacks, exogenous changes and calendar time.

->SIP III **: *Institutional & Organizational Changes*-> *SIP III b*

➔ *Inter-connected 'Downstream' Policies (& associated organizational and institutional changes)*

→ *Continued CA*

Symbols

SIP III *- Innovative Support of Institutional and other Pre-Conditions ['autonomy' in setting most strategic priorities without political interference]for a continuously updated N&GS;

SIP III a- Innovative Support of 'Knowledge Creation' in upstream Strategy formulation;

SIP III **- Innovative Support of changes in the institutional, organizational & behavioral underpinnings of the policy formulation and implementation process;

SIP III b- Innovative support of Policy Implementation on the ground

1.14.6 Final Remarks

The paper includes both a relatively extensive analysis of what a National and Government Strategy is all about and a number of additional Dynamic Sequences (future work will be more specific in creating –through an analysis of feedbacks, etc-a number of 'stylized' Dynamic Sequences -each one adapted to a particular country type). Together with future work, it will also summarize and justify the 'qualitative orientation' of the methodology utilized, particularly for situations where the global system is undergoing a process of 'Paradigmatic Change'. I will also speculate how, in these troubled times, the paper's framework of analysis might be useful to individual countries searching for new approaches to strategy and policy making. Presumably there may also be some implications for Global Adaptation.

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