Tackling “WICKED PROBLEMS” in the Public Service

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MESSAGE FROM THE CEO

Dear readers,

In a rapidly changing world, there is any number of issues affecting governments that encompass a new range of complexity, political sensitivity, and stakeholder scrutiny. These concerns challenge governance, the skills of the public service and organisational capacity. They are the issues that are resistant to solutions, are not remedied by particular best practice, and challenge traditional approaches to solving problems. They are “Wicked Problems.”

This quarter, the Commonwealth Innovations Review (CIR) features two articles on “Wicked Problems.” Jim Buller of York University takes a look at how the British government has tried to cope with the wicked problem of health care rationing, why it is, in fact, a wicked problem and the political consequences of using arm’s length bodies to depoliticise wicked problems. John Alford and Brian Head, from Policy and Society (2017), document drawbacks in the existing scholarship around ‘wicked problems,’ and suggest ways of addressing them. According to their analysis, issues lie on a varying scale of wickedness determined by a vast number of conditions, and improvements to the management of such situations may be a more appropriate goal than full resolution.

CAPAM’s stakeholders often express the need for fresh approaches in addressing a whole new range of problems brought on by the modern world. Digital adoption, climate change, migration of peoples, economic opportunities for youth, to name a few, often require broader, more collaborative and innovative approaches. Viewing dilemmas in this new age through the lens of ‘wicked problems’ may open up additional insights about productive pathways for better solutions, and gain broad stakeholder acceptance of shared strategies.

In addition to these featured articles, CAPAM always likes to showcase some of the innovative projects that come our way via the CAPAM International Innovations Awards. As the next iteration of the awards gets underway in 2018, we underscore two projects that were semi-finalist and finalist contributions respectively during the last competition. One programme from the National Environment Agency in Singapore outlines the creation of responsible offshore landfill operations to alleviate waste disposal issues in Singapore. A second is about public service transformation where not only making services more accessible, relevant and convenient to the public are targeted, but as well finding new and practical approaches to nurture and create an environment and culture of innovation and creativity in government.

Finally, please note that the CAPAM 2018 Biennial Conference, “Transforming the Public Sector for Climate Governance”, has been announced and will be held in Georgetown, Guyana, October 22-24. We hope to see everyone there!

Gay Hamilton
Chief Executive Officer
MANAGING WICKED PROBLEMS: THE NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE AND THE DEPOLITICISATION OF HEALTH CARE RATIONING

INTRODUCTION

‘Wicked problems’ are generally thought to be complicated, knotty and intractable issues. They can be difficult to define and resistant to solution – at least the usual repertoire of solutions that are operated by public officials. The literature on wicked problems originated from a critique of the rational-technical paradigm for understanding decision-making. The problem with rational-technical approaches (or so it was argued) was they required individual policy makers to achieve levels of goal clarity, co-ordination and information that were impossible in practice. The rational-technical paradigm ignores the fact that decision-making takes place in conditions of social and political complexity, which can, in certain circumstances, heavily constrain the options available to government. Policy problems become ‘wicked’ precisely because they involve a variety of stakeholders all with different and (sometimes) conflicting interests, beliefs and outlooks about the world. In this context, modern society is too differentiated and pluralistic to tolerate ‘artificial’ technocratic solutions imposed from above. Instead, the handling of wicked problems requires deft political judgment not the uniform application of ‘scientific’ methods irrespective of circumstance (Rittel and Webber, 1973; Alford and Head, 2017). Indeed, one might go further and suggest that wicked problems can never really be solved. Ultimately decision-makers are destined simply to manage these dilemmas, trying to keep them off the political agenda so that they do not adversely impact on their broader objectives.

This paper examines how recent British governments have sought to cope with the ‘wicked problem’ of health care rationing. It begins by elucidating why health care rationing might be thought of as a wicked problem, especially from the perspective of elected politicians. The paper goes on to describe the process whereby the National Institute for Health and Care Excellence (NICE) makes decisions concerning which treatments should be funded by the NHS, as well as the methodology it uses. It argues that NICE has helped to depoliticise this contentious issue, although whether NICE has actually rationed health care in England is a more debatable question. The paper concludes by considering some of the broader political ramifications of using

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arm’s length bodies to depoliticise wicked problems. It suggests that such a governing approach may be undermining the broader democratic framework within which public management takes place.

**HEALTH CARE RATIONING AS A ‘WICKED PROBLEM’ IN BRITISH POLITICS**

What does it mean to argue that health care rationing in Britain represents a ‘wicked problem’? First, such rationing has been an ongoing issue for successive British governments over the last 70 years or so. As has been well documented in the academic literature on this subject, almost from the National Health Service’s (NHS) inception, British politicians have had to accept privately (and increasingly admit publicly) that the health care an individual receives on the NHS will always be constrained by financial considerations (Klein, Day and Redmayne, 1996: 37-42). Levels of public expenditure will never be high enough to keep up with rising costs in this area. New and ever more expensive advances in medical science are part of the problem. A rapidly ageing population (linked of course to improvements in the standard of health care as a result of these advances in medical science) is another source of this quandary. Just as importantly, health policy contains its own peculiar dynamic which adds to the difficulties of containing costs. The supply of expensive but effective treatments tends to create its own demand. As patients begin to experience an improvement in the health service they receive, they want more of it, leading to a higher bill for the Treasury. From the perspective of elected politicians, health care rationing would appear to be a problem with no obvious solution.

The rationing of health care has also become a ‘wicked problem’ because of the social and political context that surrounds the NHS in Britain. It has been suggested that the NHS is the closest thing the British have to a ‘national religion’. In particular, the totemic promise, maintained by every government since 1948, that health care should be free at the point of use for everybody who needs it, has become especially popular with the public. Yet this promise can sometimes obfuscate the fact that financial considerations cannot be eliminated from the management of the NHS. The message ‘free at the point of use’ can become conflated with a belief that every individual has the right to any treatment he or she wants without having to pay. This expectation can, in turn, make questions concerning
the rationing of health care even more politically sensitive (Salter, 1998: 11-16). Such a combination of material and ideological forces leaves British politicians in a very uncomfortable position: rationing is something they must preside over, yet to be seen to be rationing can be the equivalent of electoral suicide.

A related aspect of this wicked problem is the position of the pharmaceutical industry in the health care sector. ‘Big pharma’ has historically enjoyed a powerful position vis-à-vis the government, reflecting the fact that even in the late 1940s, the prosperity of the British economy was perceived to be dependent partly on the export performance of drug companies. As a result, although the industry was regulated at this time, the regulatory regime was generous and the style was light touch. Agencies were set up to approve or reject drugs for the British market, but as Abraham (2009) has shown, they were dominated by corporate interests. Members of these bodies were allowed to have financial interests in pharmaceutical companies (whose products they could be appraising) while any industry data submitted as part of the assessment process remained confidential. The Pharmaceutical Price Regulation Scheme was also very favourable to the industry. Whitehall passed up the opportunity to control prices directly. Instead costs would be controlled indirectly as each major company was given a profit target that it was required to meet. If firms’ profits were 40 per cent above target, they would be deemed excessive and subject to correction, either through price cuts or a payment to the Treasury. However, if a company’s profits were 40 per cent below target, it had the right to apply to the government to increase prices. In short, such a regulatory structure did not confer on ministers the requisite policy instruments to control the drugs bill paid by the NHS. Moreover, any attempt to tighten up spending in this area was likely to provoke direction confrontation with a sector used to a privileged position in the political economy of health care in Britain.

Rationing as an issue became a matter for public debate in the 1990s. A key trigger was the setting up of the internal market by the Conservative Government at this time. As a result of this reform, health authorities and GPs became purchasers of services. They were required by the Department of Health (DoH) to publish plans assessing the needs of their local populations, as well as information concerning how they were intending to allocate their health budgets. This data started to highlight the difficult decisions facing administrators and doctors as they made tough choices between competing demands on their resources. The media picked up on this greater transparency and began to actively pursue stories where variation in the local availability of treatments could be detected (so-called postcode rationing) (Salter, 1998: 22-45; Klein, 2010: 201). When denied treatment, some patients resorted to litigation in an attempt to overturn these decisions, action that further fuelled media interest in this subject (Ham and Pickard, 1998). As a wicked problem, health care rationing had become particularly pressing by the time the Blair Government arrived in office.

**NICEly DOES IT: THE DEPOLITICISATION OF HEALTH CARE RATIONING.**

In recent years, there has been a burgeoning literature on the so-called depoliticisation of public policy (Wood and Flinders, 2014; Buller et. al. 2018). Depoliticisation is a term that is defined in different ways, but it is referred to here as the process whereby public officials place at one remove or disguise the political character of decision-making (Burnham, 2001). One popular depoliticisation technique used by British politicians has been to hive-off responsibility for awkward issues onto non-partisan arm’s length bodies (ALBs) staffed by experts in the field. Politicians remain in charge of the formulation of policy, including the broad objectives to be pursued by the government in office. ALBs are tasked with the day-to-day delivery of these objectives and are usually given resources and powers to help them carry out this implementation role. Politicians sometimes cheerfully admit that this depoliticisation of public policy is taking place, claiming that it is actually in the public interest.
At a time when the electorate’s trust in the capabilities of politicians is said to be declining, devolving responsibility onto neutral and independent experts is presented as a good way of enhancing the authority and credibility of political institutions. Critics suspect that depoliticisation is a popular technique in government because it allows these self-same elected representatives to shift blame onto others as and when policy outcomes turn out in a way that is not expected or desired.

It is important to note that for many scholars writing on this topic, depoliticisation does not represent the direct removal of politics from the policy process. Politics – understood broadly as difference, contestation and conflict over the means and ends of government⁵ - will always be a feature of public administration in societies (Crick, 1964). Decision-making will always involve different groups or classes competing to get their ideas and interests accepted onto the political agenda. Policy outputs from that process will repeatedly require a redistribution of resources, which may in turn provoke division and dispute. This political dimension to governance is not eliminated simply because party leaders in office choose to divest responsibility for difficult issues onto other bodies. More accurately, elected representatives are just changing or shifting the arena in which these contentious political decisions are made (Flinders and Buller, 2006).

⁵ It is not being suggested here that this is the only of the ‘right’ way of conceptualising the subject matter of ‘politics’. The question ‘what is politics’ is one that has been answered in a variety of different ways over the years (see for example Leftwich, 2004; Hay, 2007: 61-70)
In 1999, the Blair Government set up NICE as an ALB to manage the wicked problem of health care rationing. Initially, NICE’s objectives were to: (a) conduct appraisals of the clinical and cost-effectiveness of new and existing technologies and to issue recommendations, and; (b) to develop clinical guidelines for a range of treatments covering different conditions. In 2004, the Blair government gave NICE the additional task of providing non-binding public health guidance, while in 2012, the Conservative-Liberal Democrat Coalition government instructed NICE to also provide guidance for social care services and users. Initially NICE’s decisions required approval by ministers before they could be funded on the NHS, however this requirement was dropped in 2001 (House of Commons Select Committee, 2002: 23). Similarly, when NICE was originally set up, primary care trusts were not obliged to abide by NICE’s recommendations, but the implementation of NICE’s advice is now mandatory. Over the years, NICE has become drawn into a debate not just about the clinical and cost-effectiveness of different treatments, but their affordability. Such a development was probably inevitable, especially as NICE’s evaluations would always be judged against the background of finite resources. This situation has been criticised by some stakeholders who argue that it should be ministers and ministers alone that make decisions concerning the affordability of health care (Ibid: 32-33; see also Landwehr and Bohm 2011).

However, it is widely accepted by academics writing on this subject that NICE’s implicit objective was and is to depoliticise the wicked problem of health care rationing (see for example Syrett, 2003; Harrison and McDonald, 2007; Ettelt, et. al, 2010). In their account of the origins of NICE, Timmins et. al. (2016: 32-33) describe the story of Gerry Malone, Health Minister in the Major Government, who was in charge at the time of revising something known as the ‘limited list’. On this list was a range of treatments deemed to be ineffective and not to be used on the NHS. When asked to decide whether beta interferon (a drug for treating multiple sclerosis) should be included on the list, Malone reportedly did not understand why he was responsible for this technical but potentially controversial task. To quote Malone directly:

“My reaction … was … ‘how the hell am I meant to make that decision?’. The answer was ‘because you are the minister’. But I pointed out that I was probably the least equipped person to make the judgment around its [beta interferon] costs and benefits, even with the no doubt excellent advice of my civil servants” (Ibid: 32)

Interestingly, his subsequent actions seemed to belie this initial response. Malone brought in a range of advisers and produced recommendations for the limited use of beta interferon that were widely accepted (although this did not stop Malone complaining that he never wanted to be put in that position again). When Frank Dobson (Health Secretary in the first Blair Government) was put in a similar position, his decision to ignore expert advice and limit the use of Viagra provoked a storm of protest, leading to the manufacturer successfully challenging the policy in court (Klein, 2010: 202. Both examples highlight the significance of depoliticisation concerns, and both are cited as key events leading up to the creation of NICE.

How does the Technology Appraisal Process (TAP) actually work? The DoH initially chooses treatments for appraisal and it then informs NICE of these choices. NICE consults with relevant stakeholders to produce both a scope and a timeline for the appraisal. It then appoints an independent academic group to carry it out. At the same time, a range of consultees (selected clinical experts: NHS Commissioning bodies; patient groups) are contacted for their input into the process. The independent academic group compiles an evaluation report assessing the clinical and cost effectiveness of the treatment, which is then sent to a Technology Appraisal Committee (TAC) comprised of practitioners from outside NICE. The TAC also receives opinion and evidence
from other affected groups before producing a Final Appraisal Document which is conveyed to NICE’s Guidance Executive Council for approval. Groups have the right to appeal any decision made by NICE, although the grounds for such a challenge apply only to the process by which NICE arrives at its judgment, not the judgment itself. The number of occasions where NICE has had to revise its recommendations in response to an appeal is relatively small.

The TAP process also represents a broader invocation to science as a way of resolving the controversies that surround the question of which treatments should or should not be funded on the NHS. This approach is epitomised by its adoption of the QALY (Quality Adjusted Life Years) methodology. QALY provides a cost-benefit analysis of a particular treatment, taking into account the extra years of life that an intervention is likely to yield per person, adjusted for the quality of that life. Once calculated, the QALY score is integrated with the price of the treatment using an incremental cost effectiveness ratio (ICER) to come up with a ‘cost per QALY figure’. This figure then becomes the basis of a verdict concerning whether a treatment is cost-effective (Klein and Maybin, 2012: 11). There is an interesting paradox here, especially if we recall the opening comments about the concept of a wicked problem. As noted, the literature on the existence of wicked problems rejected the rational-technocratic approach to decision-making on the grounds that it failed to take into account the social and political complexities that often made such dilemmas so knotty and intractable. However NICE, with its QALY methodology would appear to reflect precisely such an approach. Elected representatives that preside over ALB’s like NICE cling to the ‘technocratic wish’ that they will somehow resolve the ‘wicked problem’ of health care rationing without any political cost. This point will be returned to in the final section of the paper (Belkin, 1997; Harrison, 1998).

Before we do, it should be stressed that NICE has always tried to build opportunities for consultation and deliberation into its institutional structures, recognising that such features are crucial if its recommendations are to enjoy legitimacy. In this context, it set up a Partners Council as part of the TAP process. The Partners Council gave representation to a range of interested parties including the Medical Royal Colleges, drugs companies, health unions and patients, ensuring they were fully aware of the process by which technologies were appraised and clinical guidelines were developed. In addition, NICE has created a Citizens Council (CC) of 30 members to provide it with a public perspective on the ethical issues that inform its work. NICE initially selects topics for consideration by the CC and provides members with a background briefing on the subject. After that, the CC has the power to call expert witnesses, can initiate further discussions and produce recommendations which NICE must respond to. The Partners Council was disbanded in 2010, reflecting the fact that attendance on this body had been in decline for some time. However, NICE still engages in a range of separate annual meetings with representatives from the pharmaceutical industry and the professions, whereas a semi-independent Patients Council Involved in NICE Group has also emerged (Timmins, et. al 2016: 143-47).

HAS NICE BEEN AN EFFECTIVE SOLUTION TO THE PROBLEM OF HEALTH CARE RATIONING?

Any attempt to answer this question of whether NICE has been an effective solution to the problem of health care rationing involves first negotiating a problem of analysis. Defining ‘effectiveness’ or ‘success’ in this context is not

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3 NICE conducts both a Single Technology Appraisal (STA) and a Multiple Technology Appraisal (MTA). The latter involves evaluating a technology against all other treatments for the condition and/or more than one possible use for it. An STA is a quicker process that judges a technology against one other treatment and for a single purpose. On the 1st April 2017, NICE introduced a ‘fast track’ appraisal for technologies deemed to offer exceptional value for money. The aim is to provide patients with quicker access to these treatments.
straightforward: any definition may have to account for different ways of conceptualising such a phenomenon. One way to judge the effectiveness of NICE might be to consider the material consequences of its decisions. In other words, has NICE achieved its objectives and prevented the NHS from spending money on treatments that are neither clinically or cost-effective? However, rather than just examining this material dimension, it may also be important to assess the ideational impact of NICE. What influence has its recommendations had on the beliefs (and ultimately behaviour) of those groups affected by it? Has NICE as a body for rationing health care been largely accepted by relevant stakeholders, or do they continue to disagree over the authority and legitimacy of its pronouncements? How these groups (including NICE itself) discursively construct the material significant of NICE may very well have a bearing on our overall understanding of NICE’s record (for a more general discussion of this issue, see Kettell, 2008).

If we begin with NICE’s material impact, the question of whether it has helped British politicians control health care costs is again not a straightforward one to answer. It is impossible to run the counter-factual and assess how much Whitehall would have spent on health care had NICE not been created. That said, Michael Rawlins (Chair of NICE from 2000-2013) has estimated that by 2005, NICE’s recommendations had added £890m to the NHS drugs bill (Timmins et. al., 2016: 93-95). It could be added that, according to its website, NICE has either fully or partially recommended approximately 80 per cent of all treatments appraised during the period March 2000 – October 2017 so that estimate is likely to be higher today (https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/nice-technology-appraisal-guidance/summary-of-decisions). One longstanding complaint about NICE is its tendency to prioritise the evaluation of expensive new drug treatments, often at the margins of the everyday provision of health care. NICE has also been criticised for not being active enough in the area of disinvestment: the examination of treatments already used by the NHS, but which are no longer clinically or cost-effective (House of Commons Health Committee, 2002: 36-40; House of Commons Health Committee, 2008: 30-32). Viewed in these terms, it is possible to question the success of NICE as a body for rationing health care.

However, once we consider the ideational impact of NICE on the beliefs of groups within the health policy network, it can be argued that it has effectively depoliticised the wicked problem of health care rationing. NICE itself is certainly keen to promote the view that it has been a success. In what might be termed the ‘authorised’ account of the organisation, Timmins, Rawlins and Appleby (2016) judge NICE’s success in terms of its ability to preserve its independence and authority in the face of challenges from both the government and various stakeholders. They argue that NICE’s independence and authority has only been seriously challenged twice in its 18 year history. The first was in 2005, involving the case of Herceptin, a drug for treating breast cancer; the second in 2010 when the Conservative-Liberal Democratic Coalition Government set up the Cancer Drug Fund (after coming under political pressure) to finance cancer treatments that NICE had rejected as not being cost-effective.4 The pharmaceutical industry, while never enthusiastic about NICE, has learned to live with a body which, as we have seen, has recommended the vast majority of its new products for use on the NHS in some capacity. Also, GP attitudes have shifted from hostility towards NICE’s in the early years to one of broad support in more recent times. Where once doctors saw NICE as a challenge to their clinical autonomy (Davis, 2000), now they perceive it as important ‘institutional cover’ in difficult circumstances where they have to deny treatments to patients in order to make budget savings.5

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4 For a slightly more critical account of the record of NICE, see the House of Commons Health Committee (2002; 2008)
5 See for example the reaction of Dr Lawrence Buckman (Chair of the GP’s Committee of the British Medical Association) in response to rumours that the Coalition Government was going to abolish NICE after the 2010
Put in different terms, although its activities have generated controversy and criticism, NICE as a body has become accepted by the major stakeholders in the health policy community, if not necessarily the British public more generally.

**CONCLUSION: SCIENCE, DEMOCRACY AND THE POLITICAL RAMIFICATIONS OF DEPOLITICISATION**

NICE may have become accepted as a permanent feature of the health policy community, but criticisms of the use of ALBs to place at one remove the political character of decision-making remain. If NICE has successfully depoliticised the ‘wicked problem’ of health care rationing, it has not eliminated the play of politics in this area. NICE’s appeal to evidence-based medicine would seem to offer a rational, technocratic answer to the conundrum of which treatments to prioritise on the NHS, but rationing remains an inescapably political process involving trade-offs between different groups with different needs. For example, it is often argued that QALY methodology prioritises physical functionality over the social and emotional costs associated with suffering from chronic illness, meaning that over the years its appraisals have automatically favoured some patients over others (Crinston, 2004: 38; House of Commons Select Committee, 2008: 33, 58-61). Even if it is accepted that QALY is the best way to evaluate a treatment’s clinical or cost-effectiveness, a question remains: how does NICE calculate the limits of acceptable spending? NICE’s response has been to develop a threshold of £20 – 30,000 per QALY but as NICE itself admits, this threshold is essentially arbitrary and has no empirical basis (Rawlins and Culyer, 2004). Even then, such considerations do not negate the more fundamental ethical issue of whether a price (calculated by QALY or any other method) can really be placed on human life? Should we be denying certain groups access to drugs (and potentially shortening their lives) simply because they do not offer ‘value for money’? Isn't such an approach morally reprehensible (Milewa and Barry 2005; Brown and Calnan, 2013)?

It is not just that NICE (a non-elected body) is making judgments with political and ethical ramifications. For many, NICE’s decision-making process suffers from an ‘accountability deficit’, despite its attempts to offer stakeholders a consultative role. Take for example, NICE’s Citizens Council discussed above. With a membership of 30, the CC is hardly representative of the British public, a point that NICE fully recognises. It is true that the CC has deliberative powers and can issue recommendations to which NICE must respond. But the CC is only an advisory body: NICE is not obliged to actually accept any suggestions it makes. Moreover, the fact that the CC only meets once a year for two days inevitably places real limits on the impact it can have, even if NICE were required to take its advice on board. With the best will in the world, any governing philosophy which places a premium on technical expertise for solving problems is never going to sit comfortably with genuine participation by the public, and while NICE’s attempt to combine the two is laudable, it is also problematic (Syrett, 2006).

Finally, the use of NICE as an ALB to depoliticise the wicked problem of health care rationing highlights a broader concern. Some academics now suggest that a direct connection exists between the increased use of depoliticisation as a governing technique and the mood of disenchantment towards the political establishment that currently exists in Britain (Hay, 2007; Flinders, 2012: 89-109). Non-elected and unaccountable bodies should not be making decisions that have political and moral consequences. It is our political representatives who should be tackling these wicked problems: that, after all, is why we elected them to represent us in the first place. It is politicians who should be grasping the nettle (however painful it may be). It is politicians

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General Election (Jack 2010).
who should be encouraging a more open and frank discussion about the intractable nature of some issues, while at the same time shaping expectations concerning the tough choices that will need to be made if such issues are to be addressed. Conversely, if our elected representatives are going to place themselves at one remove from governing (or to hide behind a veil of technocratic rationality), why should the public vote for them in the first place? In short then, for some, depoliticisation as a solution to wicked problems threatens to undermine the very democratic foundations on which governance takes place.

REFERENCES


Brown, P. & Calnan, M. (2013) ‘NICE Technology Appraisals’, Medicine, Health Care and Philosophy. 16 (2) 281-93


FEATURE ARTICLE

WICKED AND LESS WICKED PROBLEMS: A TYPOLOGY AND A CONTINGENCY FRAMEWORK

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ABSTRACT

This paper addresses shortcomings in the scholarship about ‘wicked problems’, and suggests ways of tackling them. Firstly, accounts of these problems tend to ‘totalise’, regarding them as intractable masses of complexity, so conflict-prone and/or intractable that they defy definition and solution. By contrast, we put forward a more nuanced analysis, arguing that complex problems vary in the extent of their wickedness, via such dimensions as their cognitive complexity or the diversity and irreconcilability of the actors or institutions involved. We propose a typology of different forms of wicked problems. A second shortcoming, linked to intractability, is that the favoured means of tackling wicked problems has tended towards ‘one best way’ approaches, most commonly collaboration with key stakeholders. Moreover, particular forms of collaboration tend to be routinely applied in ‘one-size-fits-all’ fashion to a variety of situations – notably with a plethora of actors, and a focus on governance rather than implementation management. We put forward a contingency framework, based on our typology, proposing which types of collaboration are suitable for which types of problem. Finally, we argue for a more realistic standard of success in dealing with wicked problems, especially the most difficult ones. To call for the ‘solving’ of these problems is to set up a standard which is not only impossible but also perhaps unnecessary. We argue that we do not so much ‘solve’ wicked problems as make progress towards improvement or towards better managing them. We spell out a more realistic version of ‘progress’.

INTRODUCTION

Wicked problems – those that are complex, intractable, open-ended, unpredictable – seem to be proliferating. Almost every day, we hear about further complications in well-known challenges, such as global warming, drug abuse, child protection or natural disasters. We also hear about new wicked problems that arise from developments in the social or natural world such as the safety of nanotechnology or growing numbers of refugees seeking entry to wealthier or politically less oppressive countries.

This greater salience of wicked problems could be because they have in actual fact increased in intensity and/or number. If so, we obviously need to pay more attention to how we might go about recognising, understanding and tackling them. But another possibility might be that the label of ‘wicked’ has come to be applied indiscriminately. In particular, it may be that a generic concept of wicked problems has prevailed, even though the range of concrete
situations to which it has been attached vary in ways that stretch that concept. Moreover, this generic concept has in turn given rise to a ‘one best way’ to tackle problems (see for example: Dawes, Cresswell, & Pardo, 2009; Durant & Legge, 2006; Kreuter, De Rosa, Howze, & Baldwin, 2004; Morner & Misgeld, 2013), potentially creating a mismatch between the proposed ‘solutions’ and specific wicked problem situations. The net result has been a proclivity to cast many problems as more wicked than they actually are – in particular where a problem might be wicked on one dimension but not so much on others.

This paper addresses the prospect that the term ‘wicked problem’ has become inflated and over-used. After first sketching the nature and extent of wicked problems, the paper proceeds as follows. First, it identifies shortcomings in the applied scholarship to date, namely its apocalyptic or totalising frame; its related tendency to adopt ‘one best way’ responses; and its impossibly ambitious test of policy ‘success’. Second, it sketches several of the major kinds of responses to wicked problems. Third, it seeks to distinguish different types of wicked problems in a more finely grained manner as the basis for a typology, enabling further insight into the nature of the problem. Fourth, it suggests how a contingency framework might be constructed on the foundations of the typology. Finally, it argues for a more useful view of what constitutes ‘success’ in tackling a wicked problem. In the process, it sheds light on both the ‘less wicked’ problems and also on the deeply wicked ones. It focuses on the perspectives and actions of public managers or policy-makers, rather than the broad political processes of public debate and coalition-building, for the simple reason that public managers and policy-makers are the typical audience for research in policy disciplines. As an explanatory device to bridge theory and management practice, we consider the example of complex policy debates about how to control illicit drugs.

THE PROGRESS OF WICKED PROBLEMS

The ‘wicked’ problem discourse emerged in the 1970s from a critique of rational–technical or ‘engineering’ approaches to complex issues of social planning and public policy, on grounds such as their need for impossibly high levels of goal-clarity, coordination and performance information (Pressman & Wildavsky, 1973), or their neglect of the lived experiences and perspectives of stakeholders and service providers. The best-known critique was Rittel and Webber’s ‘Dilemmas in a general theory of planning’ (1973). They took aim at ‘engineering’ approaches that tried to solve major urban and social problems. Modern society is too pluralistic to tolerate artificial solutions imposed on social groups with different attitudes and values, and this pluralism undermines the possibility of clear, agreed solutions. The finite problems tackled by science and engineering are seen as relatively ‘tame’ or ‘benign’ in the sense that their elements are definable and solutions are verifiable. By contrast, modern social problems are generally ‘ill-defined’ and resistant to an agreed solution. They are therefore ‘wicked’, relying on political judgements rather than scientific certitudes (Rittel & Webber, 1973: 160). Many scholars have found this analysis helpful in explaining the difficulties which have plagued some areas of environmental and natural resources policy, urban and regional planning and social and health policy, with new insights as to why so many policies and programmes do not achieve their goals and have unforeseen effects (Head, 2008; Kreuter et al., 2004; Morner & Misgeld, 2013; Turnpenny, Lorenzoni, & Jones, 2009), including: poorly defined problems; problems in flux or subject to contestation; a focus on symptoms instead of underlying causes; disagreements that make possible solutions unworkable; and weak knowledge for effective implementation.

Other writers have drawn attention to related phenomena while using different conceptual language. Thus, some regarded poorly defined problems and stakeholder conflicts as evidence of ‘messy’ policy problems (Ackoff, 1974; Horn, 1981). In more analytical terms, Simon (1973) drew attention to ‘ill-structured’ problems (see...
also Hoppe, 2010; Mason & Mitroff, 1981). The policy literature has increasingly demonstrated that problem definition is crucial, and that every perspective about the nature of a problem tends to imply a preferred solution (e.g. Peters, 2005). The use of the term ‘wicked problem’ has increased in social science literature, especially since the 2000s, although not always in a discriminating manner. In this paper, we attempt to develop a more finely grained approach to identifying those features of policy problems that intensify ‘wicked’ characteristics, leading to an analytical typology that assists in the discussion of the contingent situations underlying various policy challenges.

**SHORTCOMINGS OF THE WICKED PROBLEMS FRAMEWORK**

The body of concepts surrounding wicked and ill-structured problems has served to draw attention to complexity in social, natural and political processes, as well as to alert us to their indefinability, intractability and entanglements. But this conceptualisation has also suffered from significant shortcomings, which limit its validity and usefulness.

First, accounts of these problems are often prone to **totalising**, that is, to regarding the problems as intractable masses of complexity, so conflict-prone and/or knotty that they defy definition and solution (Lazarus 2009; Stares 1996). Such accounts lean to the view that it is difficult to know where to start; or that some causal factors are hard to discern or to influence; or that goals are inherently conflictual or in some way hard to define. To some degree, this position lends comfort to those who wish to avoid grappling with such problems.

One significant consequence of this totalising approach is that it lacks a basis for breaking the problem down into smaller, more manageable parts. It is difficult, without an organising framework, both to understand the parts – and how they work – and situate them within the bigger context. In short, it lacks an analytic typology – something to which we return later in this paper.

Secondly, the temporal variant of totalising is that ‘wicked problems’ require transformational responses. This apocalyptic style of analysis describes big, fast-moving problems that require big, fast-moving solutions. There is pressure to get it right, with little time to ‘slow-cook’ small interventions. Its proponents seek a dramatic transformative intervention that settles things decisively.

A third challenge in some wicked problems analysis is that it tends to invoke a conception of ‘success’ which is almost impossible to achieve. A totalising approach implicitly posits a binary choice between either transformative success or ongoing defeat. Because a wicked problem is seen as a tangled, tightly knit cluster of phenomena, dealing with any part of it is seen to require somehow dealing with its other parts at the same time, as a knot or a mass of difficulty. This approach therefore tends to shut out ways of recognising positive gains from various attempts to improve the situation, including incremental changes and ‘small wins’ (Weick, 1984). To call for the ‘solving’ of these problems is to set up a standard which is not only impossible but also perhaps unnecessary. We do not so much solve wicked problems as make progress towards improving them or towards better managing them (Head, 2010).

Finally, these aspects of the generic wicked problems discourse have not encouraged or facilitated thinking about degrees of wickedness. Instead, each situation has been seen in binary terms as either wicked or tame. But the fact that proponents of this generic framework refer to ‘tame’ problems as the obverse of wicked ones suggests that there may be mixed situations between these two extremes. By corollary, insufficient consideration has been given to analysing what might be the constituent elements of these problems, into which they might be decomposed for more fruitful analysis. Rather, the wicked problem remains as one big complex entity – a ‘black box’ whose inner mechanisms constitute a mystery. This complicates the design of interventions to fit the specific elements of the problem. Instead of fitting glove-like into the contours
of the problem, taking account of its components, generic ‘one-size-fits-all’ interventions are likely to be poorly adapted to the subtleties of each problem landscape.

In short, while there are various strategies for dealing with wicked problems, the favoured means of tackling them each constitutes a ‘one best way’ to do so (Alford & Hughes 2008). If there is contention between alternative strategies, it is between standard solutions rather than custom-made variations.

**STRATEGIES FOR TACKLING WICKED PROBLEMS**

The literature offers a variety of alternative strategies for tackling wicked problems. A well-known categorisation is by Roberts (2000), who identified three possible types of intervention: authoritative, competitive and collaborative besides traditional professional management. **Authoritative** strategies entail strong (in some versions ‘heroic’) leaders with clear directive authority. They have either assumed or been given command by followers, organisations or polities. Their ‘strength’ is based on their ability or experience in making things happen; it is mainly directed towards forging and promulgating a corporate direction or purpose, then inducing others to follow that path. Although strong, this leader is not necessarily dictatorial, nor even hierarchical, but rather might seek to motivate, empower or even inspire others to follow (Kotter, 1990).

Whilst this model seems to have a lot to offer in decisiveness and ‘getting on with things’ in circumstances that are often chaotic, its major drawback is that it relies on a high-calibre leader to discern the nature of the problem and devise an effective solution for it. However, wicked problems by their nature are usually beyond the cognitive capacity of any one mind to diagnose or comprehend (Heifetz, 1994), especially if they are technically complex issues. Typically, these problems also call for thoughtful analysis, dialogue and action on the part of affected stakeholders.

Roberts’ second possible approach (2000) is a **competitive** strategy: sponsoring or fostering competition between societal actors to come up with understandings of the problem and potential advances in dealing with it. The competitive dynamics of this approach have the potential to intensify the search for new ideas about tackling the problems. But they also risk generating heightened conflict that consumes resources and delays solutions, as happens when litigation looms large.

A third strategy constitutes one kind of answer to the need for multiple inputs and insights: **public consultation** or participation in decision-making. Its rationale is summed up in the proverb that ‘many heads are better than one’.

Its typical devices include wide dissemination of and access to information; public meetings; and more or less formal hearings with written submissions and interim reports. It is also very likely to entail collaborative work among organisations, public, private or non-profit (Ansell & Gash, 2008). Its problem is the opposite to that of strong leadership, in that even if the collective public was capable of uncovering and conveying the relevant knowledge, it is doubtful that it could pull this together into a coherent account (Heifetz, 1994).

Another other type of intervention is a specific variant of Roberts’ authoritative strategy: the ‘expert’ strategy, similar to the authoritative one except that the basis of the leader’s authority is expert knowledge about the problem area. To the extent that expertise can have some impact, its value derives not from being able to diagnose the problem but from understanding what questions need to be asked and investigations pursued. Again, this form of intervention suffers from the fact that, by definition, the nature of the problem is beyond the thinking abilities of even the most erudite expert. More importantly, it neglects the fact that technical expertise is not the only type of capability required. Also needed is the capacity to lead, organise and manage the implementation of responses. To expect all these qualities in one leader would be asking for a great deal indeed.

Other writers have proposed variants similar to the categories
used by Roberts (such as Durant & Legge, 2006; Kreuter et al., 2004; Termeer, Dewulf, Breeman, & Stiller, 2015; Weber & Khademian, 2008); but they are prone to similar shortcomings. This analysis shows that none of these four strategies, taken alone, is likely to meet the requirements of the situation. In particular, it illustrates how the 'one-size-fits-all' model has bedevilled government organisations for decades (Turnpenny et al., 2009; Alford and Hughes 2008; Head and Alford 2015). Instead, this paper puts forward a typology for understanding constituent elements of a problem, and argues for a contingent approach as a more fruitful approach.

A TYPOLOGY OF PROBLEMS

Although the great majority of the literature on wicked problems tends towards a standard model of wicked problems, inspired mainly by Rittel and Webber (1973), there are variations on that formulation, with key terms that are different but with roughly the same meanings (Ison, Collins, & Wallis, 2015). Examples are ‘intractable controversies’ (Schon & Rein, 1994); ‘unstructured’ or ‘incorrigible’ problems (Hisschemoller & Hoppe, 1995; Hoppe, 2010); ‘tangled problems’ (Dawes et al., 2009); and ‘complex problems’ (May et al., 2013). There has also been some impetus towards formulating typologies of various kinds, seeking to classify either different conceptions of the nature of the problem (eg Heifetz, 1994; Hisschemoller & Hoppe, 1995; Hoppe, 2010); varying levels of engagement of publics and the strength of institutional linkages (May et al., 2013); or the relative weight of various wickedness criteria (Turnpenny et al., 2009). Some authors have attempted to condense and simplify Rittel and Webber’s original list of 10 characteristics of wicked problems, by grouping the key ideas – for example, Head (2008) discerns stakeholder divergence, situational complexity and knowledge uncertainty as key organising themes; Farrell and Hooker (2013) focus on three key aspects of the problem situation – finitude of knowledge and resources, complexity of linkages and normative framing of issues (see also Dawes et al., 2009; May et al., 2013; Weber & Khademian, 2008).

The endeavour to construct a typology of problems (and implied responses) can be challenging. One difficulty is how to ensure its dimensions and elements are the most relevant ones in respect of wicked problems. Here, we commence with the simple device of focusing on the two irreducible elements of wicked situations: the problem itself and the actors involved. When articulated with each other, they form a two-dimensional matrix of possibilities (see Figure 1). In this case, the

![Figure 1. Alternative types of complex problems.](image-url)
matrix has only nine cells, which of course renders it vulnerable to the abstraction error mentioned above. The small number of dimensions and options cannot comprehend the intricacy and scale of a truly wicked problem. But at the same time, a radical increase in the number of elements would create a degree of complexity which may exceed even the most developed cognitive capacity. We emphasise that the categories in Figure 1 represent a spectrum or continuum rather than discrete or self-contained types.

A second difficulty relates to the quality of the nominated dimensions. Because they are usually supposed to encapsulate the field in a comprehensible number of dimensions and elements, they inevitably entail some abstraction from reality, and hence selection bias. Drawing on the literature, the framework incorporates more finely grained features within each dimension. These aspects derive from what both theoretical and empirical literatures have identified as the key factors that underpin these dimensions. The framework does not amalgamate these factors or apply to them a common metric – which would be like trying to compare apples and oranges. Rather it provides a set of common categories for case by case analysis. These dimensions constitute merely scaffolding for ordering the more detailed dimensions. They are not meant to offer any particular insights in themselves. The vertical dimension reflects the nature of the problem, in particular its level of intractability in itself (see Heifetz, 1994; Roberts, 2000). If our general attention is on unearthing problems and their solutions, then logically there are three feasible possibilities (see Figure 1):

(1) Both the nature of the problem and the solution may be clear to the decision-makers in question. This can encompass even issues that seem at first sight to be quite complicated, such as the technical and planning challenges underpinning the construction of the Channel Tunnel between France and England. This project certainly encountered many difficulties that required enormous expertise. However, the relevant skills and resources for designing and building the tunnel were known orknowable, and were driven by two government sponsors who were committed to its success. In other words, the relevant knowledge was ‘out there’; but it required large effort to find, develop and apply it.

(2) The nature and causes of the problem may be known, but the solution is not – and indeed, it is difficult to find a sound solution owing to analytical or political complexities.

(3) Neither the problem itself nor the possible effective solutions are clearly known to the decision-makers in question (see Hisschemoller & Hoppe, 1995; Levin, Cashore, Bernstein, & Auld, 2012; van Bueren, Klijn, & Koppenjan, 2003). The war on drugs seems to be a candidate for
this classification, as discussed below.

In this simple schema, the first type is the least wicked, while the third type is the most wicked.

The horizontal dimension concerns the key people – the stakeholders and their institutional context – who affect the tractability of the problem. The essential consideration here is the propensity or otherwise of those involved to enable the problem to be properly addressed (see Farrell & Hooker, 2013; and May et al., 2013). This propensity is a function of three factors. One is the locus of important knowledge about the problem (Dawes et al., 2009; May et al., 2013; Weber & Khademian, 2008) – specifically, whether it rests substantially with the policy manager in question or is fragmented and held by multiple stakeholders. To the extent that policy managers need that knowledge in order to understand the causes of a problem and tackle them, then its fragmentation may increase the difficulty. Even in a situation of mutual goodwill, this is a problem of transaction costs, because time and effort are required to identify who has what knowledge and arrange with them to provide it. But this is also affected by a second factor: the extent to which managers and stakeholders have divergent or conflicting interests, including within each grouping (Farrell & Hooker, 2013; Kreuter et al., 2004; May et al., 2013; Weber & Khademian, 2008). The more divergent their interests, the more difficult it is for the policy managers to access that knowledge, since stakeholders may deploy their control of key knowledge in a strategic manner favouring their interests. A third factor, which in part mediates the other two, is the relative power of the policy managers and the stakeholders. If the managers lack particular knowledge held by a stakeholder who is reluctant to make it available, the managers’ chances of acquiring that knowledge would be affected, positively or negatively, by their relative power (see Kreuter et al., 2004; May et al., 2013; Weber & Khademian, 2008). Assembling these elements, three major alternatives are conceivable:

(1) The most tractable possibility is where neither knowledge nor interests are fragmented between the managers and the stakeholders, and neither has a relative power advantage. In this situation, it will be less difficult for the managers to access relevant knowledge and to reach agreements with external parties about appropriate actions for tackling wicked problems.

(2) A moderately intractable situation arises where knowledge is fragmented among various parties, and therefore takes time and effort to access, but the stakeholders are broadly in consensus or at least indifferent about the nature of the problem and the possible solutions.

(3) The least tractable alternative is where both knowledge and interests are fractured among the various actors. In this situation, not only is the relevant knowledge about the problem spread across multiple actors, each with a different part of that knowledge, but also, their interests are such that they are reluctant to share understandings with others who may be perceived as rivals.

Putting the vertical and horizontal dimensions together in their present form (Figure 1), nine possibilities present themselves as a continuum. At the bottom left corner are tame problems, for which both the problem and the solution are clear, and stakeholders readily share knowledge and have congruent interests. These conditions can apply even if the problem is multifaceted and requires large-scale organisation and expertise. At the other extreme, wicked problems are where neither the problems nor the solutions are known, and where both relevant knowledge and interests are fragmented – and this situation will be even more intractable if key conflicting knowledge-holders also have substantial power.

In between are other possibilities from moderately tame to moderately wicked, which can be discerned by seeking to calibrate where each sits on each of the
dimensions. However, these dimensions can be hard to measure in themselves, owing to the well-known complexities of wicked problems. Instead, we propose some further sub-categories of our typology which refine our understanding by considering the causal factors underlying those dimensions.

One particular feature of this framework is of special interest because of the possibilities it opens up for applying a contingent approach. Specifically, it enables recognition of differing kinds of underlying causes, and therefore assists selection of more tailored ways of both comprehending and tackling them. For instance, it may emerge from an investigation of the various contributory factors that a particular problem’s ‘wickedness’ is more attributable to the problem structure than to the qualities of the stakeholders. In short, it opens up the possibility of varying our responses to wicked problems.

**TOWARDS A MORE FINELY GRAYED TYPOLOGY**

Thus far, we have outlined a broad typology of complex problems. However, the breadth of the typology limits its usefulness in two respects. One is that actual causes may be subsumed under the broader categories. For example, in the case of the drug problem, which is international in its scale and reach, the clarity of the problem and of its solution may provide a general picture of the issue and of the main actors, but not necessarily a clear account of key aspects of distribution chains, social structure or drug manufacturing processes. The other limitation is that it does not necessarily unearth key causal linkages among entities or phenomena that are buried within the broader ones. There is therefore a need for more finely grained categorisation. We have identified from the literature a wide array of potential mechanisms which can help provide more specific insights. But at the same time, the inclusion of all these factors in a common construct would be unwieldy, involving more than three dimensions.

Rather than try to integrate a dozen or more dimensions in one framework, we adopt a two-level framework. One level is the broad typology already described, which sets out alternative possibilities in two dimensions. The other level looks within those alternatives, to consider the factors underlying them – in particular those relevant to the practical needs of decision-makers and managers. Our method, therefore, is to conduct a multi-stage analysis – first examining the possible factors underlying the broad dimensions, drawing preliminary judgements of the extent to which the problem is wicked, then synthesising those judgements into an overall picture of degree and type of wickedness. Here, we firstly explain the sub-categories and causal factors, and how they might be used. Later, we sketch the elements of a contingency model, designed to improve the alignment of appropriate interventions with given wicked problems.

The sub-categories drawn from the literature are designed to cover all the key factors in each dimension that might shape the degree and types of wickedness in a given problem (see Table 1). *The more these factors are present, the more the problem can be described as ‘wicked’.*

First, the vertical dimension: the problem in itself. This is basically about complexities in the technical aspects of the situation – i.e. the relative tractability of the objective conditions, rather than complexities to do with the stakeholders (who are considered within the horizontal (stakeholder) dimension of Table 1). The focus here concerns the inherent structure of the problem, that is, the extent to which problem clarity allows for effective interventions, without simply generating other problems. The focus is also on knowledge – that is, the extent to which the problem and its solution are in themselves understandable to a decision-maker or policy manager. This varies according to a wide range of underlying difficult features, of which we note here only a few by way of illustration. One aspect is ‘knowability’: problems are more likely to be wicked where knowledge about them is hard to access, less visible or less tangible – in effect, where there is a deficit of knowledge. Other problems might be complicated by an abundance of information, from which the
challenge is to identify and select the salient causal elements, for instance where the issue involves multiple variables and complex feedback loops. Some cases might allow the display of some key features such as their outcomes, but still leave cause-and-effect linkages or chains unexamined. Another complexity arises where it is not possible to ascertain the effective causal link without actually commencing an intervention (iterative discovery) – whereupon it may emerge that this was the wrong intervention.

The second dimension comprises stakeholders and their institutional arrangements. We argue that the relative wickedness of problems can in part be understood by reference to the key features of the stakeholder environment, foreshadowed above: knowledge, interests and power. The knowledge aspect is prone to factors which affect both the coherence and the salience of the knowledge available to decision-makers. The coherence aspect concerns the degree of fragmentation of the relevant knowledge between individuals and groups. Thus, one stakeholder may hold some of the relevant knowledge required to tackle a complex issue, but another may hold a different piece of knowledge without which the first is not very useful.

The institutional framing aspect concerns how much attention is given to the various pieces of knowledge, either by the decision-makers or the stakeholders. This will in part be a function of the volume of ‘coverage’ the issue receives, but more importantly of how its constituent elements are constructed. For example, in relation to greenhouse gases and climate change, the loss of Amazon rainforests as a major contributor to global warming is a large but regionally concentrated issue, by comparison with the more regionally diffuse but arguably a very significant role played by vehicle emissions of CO2.

<table>
<thead>
<tr>
<th>Basic dimension</th>
<th>Causal categories</th>
<th>More detailed dimensions</th>
<th>Scale of wickedness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem itself (vertical dimension)</td>
<td>Inherent complexity</td>
<td>Contradictions/dilemmas etc</td>
<td>Contradictions/dilemmas present = more wicked</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remedies causing problems</td>
<td>Remedies causing problems = more wicked</td>
</tr>
<tr>
<td>Clarity of problem</td>
<td>Hidden/disguised information</td>
<td></td>
<td>Problem unclear = more wicked</td>
</tr>
<tr>
<td></td>
<td>Intangible phenomena</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarity of solution</td>
<td>Multiple variables</td>
<td>Iterative discovery ('Ready, fire, aim!')</td>
<td>Solution unclear = more wicked</td>
</tr>
<tr>
<td>Stakeholders and institutions (horizontal dimension)</td>
<td>Knowledge</td>
<td>Institutional framing</td>
<td>Extensive reframing → level of attention = more wicked</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Knowledge fragmentation</td>
<td>High knowledge-fragmentation = more wicked</td>
</tr>
<tr>
<td></td>
<td>Interests</td>
<td>Interest differentiation/conflict</td>
<td>High interest differentiation/conflict = more wicked</td>
</tr>
<tr>
<td></td>
<td>Power</td>
<td>Stakeholder power-resources</td>
<td>High stakeholder power resources = more wicked</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enablers/constraints</td>
<td>More substantial enablers/constraints = more wicked</td>
</tr>
</tbody>
</table>

Table 1. Deconstructing the dimensions of wicked problems.
The ‘interests’ factor affects the degree of conflict among and with stakeholders. To the extent that both decision-makers and stakeholders adopt different positions about the causes and solutions of problems, they are unlikely to discover ways of addressing them and even more importantly, to work together to implement the changes. Again, global warming is a classic case, not only of conflicting interests (e.g., oil companies vs. environmentalists) but also cross-cutting ones (e.g., China’s need for economic growth vs. its need to abate widespread dense smog).

Finally, the power factor distorts, mediates, and bridges the impact of the other factors. To the extent that either the decision-maker or the stakeholder has power, the interest differentiation to which they contribute will be more significant than that of other parties. This power is in turn a function of both an ‘internal’ and an ‘external’ condition. The internal one is the set of capacities (or ‘power-resources’) the actors hold, such as money, positional power, legitimate authority, expertise or whatever (French & Raven, 1959; Lukes, 2005). The external condition is the context (or ‘power-terrain’) in which the actors operate, which affects the impact of its power-resources and its ability to wield them. The availability of resources, and willingness to deploy them, makes a difference. Thus, technical challenges on a grand scale, requiring significant funding, high innovation and managerial skills – such as the NASA project to ‘put a man on the moon’— might turn out to be more feasible for rich countries than resolving some of the complex social problems of our large cities (Nelson, 1974).

Bringing all these dimensions and categories together, we can incorporate more specific causal factors, without paralysing the analysis through balancing an unmanageable number of variables. Thus, a problem is more likely to be wicked if several conditions (or most of them) are present:

- **Structural complexity**: inherent intractability of the technical (i.e., non-stakeholder-related) aspects of the problem.
- **Knowability**: Not only is there little knowledge about the issue, but the nature of the problem or its solution is such that it is unknowable – that is: the relevant information is hidden, disguised or intangible; it comprises multiple complex variables; and/or its workings require taking action to discover causal links and probable outcomes.
- **Knowledge fragmentation**: the available knowledge is fragmented among multiple stakeholders, each holding some but not all of what is required to address the problem.
- **Knowledge-framing**: some of the knowledge receives either too much or too little attention because of the way it is framed, thereby distorting our understanding.
- **Interest-differentiation**: the various stakeholders have interests (or values) which are substantially in conflict with those of others.
- **Power-distribution**: There is a dysfunctional distribution of power among stakeholders, whereby very powerful actors can overwhelm less powerful ones, even if the latter constitute a majority consensus; or whereby sharply divided interests are matched by sharply divided power.

By contrast, a problem is more likely to be tame if it is knowable, the knowledge is publicly shared or accessible, there are no deep conflicts of interest among stakeholders, and power is well distributed. In between tame and very wicked problems, there are other problem types which will vary in their degree of difficulty to the extent that the above conditions are moderated. Most importantly, they may vary in their type of difficulty, holding open the possibility of adjusting interventions to suit the particular type.

**APPLYING THE TYPOLOGY TO THE ‘WAR ON DRUGS’**

The above analysis provides the basis for a contingency framework – that is, of moving from a ‘one-size-fits-all’ model to one where the choice of intervention type depends on and fits with the circumstances. While space precludes a full specification of
such a model for this paper, its general logic can be sketched briefly by analysing a complex problem in terms of the more detailed typology (see Table 1).

The example of formulating and implementing policies to control illicit drugs is highly complex (Dorn & South 1990). Its complexity rests on three factors that also make it a wicked problem. The first is addiction, meaning that interventions assuming rational choice on the part of drug abusers are ineffectual or counter-productive. The second is the criminality of the drug trade, which means that many of its actors and processes operate ‘underground’, so that it is difficult, if not impossible, to gather comprehensive evidence, apply interventions or monitor their effects with any clarity. These two factors counteract each other, in that the addictive nature of drugs makes legalising them perilous, while outlawing them reinforces the dangers of the drug trade. The third factor is the multifarious nature of drug production and distribution. Hard drugs are produced in non-metropolitan countries, such as Afghanistan or Colombia, and distributed through vast networks crossing many countries, all outside the direct control of the United States or Europe where they are mainly consumed. In drug-consuming countries, distribution networks have bases in differing ethnic communities and social groupings (Kleiman & Smith, 1990).

One major intervention, popular among politicians seeking to project an image of ‘strong leadership’, is deterrence – increasing either the penalties or enforcement efforts against illicit drug use. This assumes that drug users rationally weigh the expected enjoyment from the drug against the severity of the penalty and the likelihood of being caught – a dubious assumption for addicts. The research evidence shows clearly that deterrence is generally ineffective, if not counter-productive when banned substances are seen as attractive ‘forbidden fruit’ (MacCoun, 1993; Weatherburn, Topp, Midford, & Allsopp, 2000).

A second strategy is market disruption – applying law enforcement to interdict drug supply. While this is seen as a vital strategy in every country, its effectiveness is inconclusive (Marks, 1990). Major drug seizures represent only a fraction of the total traffic, the flow of which is abundant and in any case clandestine and hence not measurable (Weatherburn et al., 2000). More seriously, such interventions may increase drug prices and redouble the efforts of surviving drug dealers. Efforts to heavily repress drug dealing activities in some localities may serve to displace the problem to other places.

A third strategy is to rehabilitate drug users through legally mandated treatment, as when a judge requires an offending addict to undertake a methadone programme as an alternative to prison. The research tends to suggest that this can be relatively effective in getting addicts off drugs (Anglin, 1988; Brecht, Anglin, & Wang, 1993; Mendes & Rowe, 2004), but it is by its very nature applicable to only a minority of affected people. By definition, only those who have been caught abusing drugs can be subjected to this method, and only some of them are actually treated in this way.

Another strategy to deal with some of the adverse health effects of drug use, especially heroin, is harm minimisation, which entails accepting that addicts will inevitably consume drugs, in particular with needles, and seeks to minimise the danger of infection or overdose by providing for safe injection houses or needle exchanges. Critics of this approach point out that it may serve to make drug use easier and therefore more persistent.

Finally, some argue for strengthening primary prevention strategies, most commonly drug education of one kind or another. Some programmes in particular take into account young people’s developmental context and experiences, and seek to address the social precursors to drug use, such as troubled family life, low self-esteem, poor schooling. But in general the research indicates that for these programmes to be effective, they need to reinforce the work of professional drug
educators with involvement from schools, parents and the community (Dusenbury & Falco, 1995). In some cases, the very factors that fostered drug abuse, such as family breakdown, may also mean that these other parties, such as parents, may be unable to contribute. Moreover, the chains of cause and effect between programmes and behaviour are not well understood, and prone to external influencers. Lastly, as Boyum and Reuter (2005) observe: ‘… one has to wonder whether programs aimed at the entire child and adolescent population are an efficient way to reach the small minority who will become heavy users … ’ (2005, 92).

This issue clearly qualifies as a wicked problem. At its heart lies an inherent structural complexity: addiction, which tends to rule out any solution designed to appeal to the rational interests of addicts. This feature also makes some interventions counter-productive, for instance, where a major drug seizure raises prices and prompts dealers to redouble efforts to take over market share from others. As ongoing debates around this issue attest, there are contending views about how people become addicts and the place of personal responsibility for self-harming decisions. This, combined with the hidden nature of the drug trade and its international reach, mean that neither the problem nor the solution can be clear. At the same time, the prominent role of drug cartels and gangs virtually guarantees that there will be both knowledge fragmentation and interest differentiation, as manifested both by internecine struggles for power among drug syndicates but also by terms like the government’s ‘War on Drugs’.

The case for conceiving of drug policy as a wicked problem is very strong. Such examples help us come to terms with the degree of difficulty in tackling wicked problems. They also help us to identify which particular aspects of the problem are more deserving of our attention, and what kinds of intervention might be effective.

**ELEMENTS OF A CONTINGENCY FRAMEWORK**

This paper has put forward a typology of complex problems which is more detailed than other typologies, and suggested its use as a framework for a contingent approach to dealing with wicked problems. It has also noted some standard responses to wicked problems (such as authoritative leadership and public consultation) as illustrations of actual practices. We now put these aspects together as the basis for a contingency framework, using the drugs case to explain it. The rationale of this analysis is to acknowledge that wicked problems come in various shapes and sizes, each requiring a particular handling. The purpose has been to identify these differences more precisely than those offered in the previous literature and even in the matrix put forward above. This entails consideration of each problem case in terms of the causal factors, enabling an assessment not only of the extent to which it is ‘wicked’ but also, and most importantly, of the type of complexity in that case. That is important because it then informs what kind of intervention should be tailored to deal with the problem. It is also important to understand that for decision-makers, this entails making a judgement on how to handle an issue, rather than pretending the decision can be ‘read off’ or derived from a *precise scientific estimate*.

Table 1 has proposed the main causal linkages for each category, from which the particular extent and variety of incidence of complexity can be inferred, and therefore the appropriate set of interventions. In relation to drugs policy, it is evident that this is quintessentially wicked. It is one in which the experts, not to mention the political leaders, have trouble framing or agreeing on causes and solutions. There is also wide (and sometimes deadly!) disagreement stemming from different interests coming into contact. Particularly difficult is the fact that any one ‘solution’, if implemented, tends to generate other counter-acting pressures, for example, when ‘harm minimisation’ gives undue comfort to dealers and addicts.

On the basis of this analysis, there is a case to be made in the area of drugs policy for adopting – and hopefully improving upon – public consultation and participation,
but also some supportive and facilitative tasks alongside that process. The drug issue needs to mobilise large numbers of people, not only in identifying the problem and developing solutions, but also in implementing them (as was found with the HIV/AIDS in earlier decades). This participation is important not only to mobilise the combined knowledge of those involved, but also to attract and maintain support. However, while public participation is a necessary condition for tackling the drug problem, it is not a sufficient one, since it is necessary to juggle the difficult imperatives posed by addiction and crime. Nevertheless, this approach is far preferable to authoritative leadership, which in its more aggressive versions tends to aggravate the problem rather than attenuate it, as when periodically a ‘War on Drugs’ is sponsored by the White House.

The essential point here is that proposed interventions need to be aligned with the circumstances in which they apply. Failure to do so can lead not only to lack of success but also to actual misfortune.

**CONCLUSION**

The perception of a problem as an indivisible ‘mess’ of complexity entails that it is not possible to align feasible and legitimate solutions to the problem itself. This totalising perspective on the problem means that any solution is likely to be misaligned, and even contradictory or irrelevant. However, the situational contingency framework we have outlined also suggests a way of making some headway against this difficulty. Specifically, to the extent that it is possible to recognise types of complexity and diversity, it is also easier to apply different interventions (or non-interventions) to different parts of the problem. The targeted interventions this makes possible could enable more congruence between the problem and the net benefits of the proposed interventions. It is also possible to employ a more ‘mindful’ approach to ‘stopping rules’, seeing them as formulated from judgements about how much progress realistically needs to be made regarding each aspect of the problem. Our argument is that improvements can indeed be achieved. Moreover, the public participation approach may also add something to the process of defining ‘success’, in that those involved can exercise great control over the definition of success, and are therefore in a better position to trade off different costs and benefits in a way which makes progress in the face of intractability.

If there is no ‘root cause’ of ‘wickedness’, there can be no single best approach to tackling such problems. If, for example, it is claimed that the fundamental cause of wicked problems is lack of scientific knowledge (eg about climate change), this claim already implies a solution – more scientific research to reduce uncertainty and to convince those who are sceptical of the mainstream science consensus. On the other hand, if the fundamental problem is seen to be divergence of viewpoints, the implied solution is to establish processes of inclusive participation that can lead towards a workable consensus.

The term ‘wicked problems’ has been bandied about indiscriminately by some public officials and scholars. Some of them use it to describe situations which they effectively over-estimate: problems which might be somewhat complicated in conventional terms, but not in fact wicked, as exemplified by large engineering projects like the Channel Tunnel. Others use it to describe problems that are in fact wicked, but from varying perspectives about policy implications. Of these, the more pessimistic overestimate the difficulty, seeing these problems as insuperable and therefore in the ‘far-too-hard’ basket. Others acknowledge the intractabilities, but nevertheless err on the side of optimism, assuming these problems are susceptible to the usual mix of rational understandings, organisational routines, coordination systems and databases.

We have argued that a key obstacle to making progress with intractable problems has been the tendency for some analysts and practitioners to act as if wicked problems were all the same in both the type and extent of their ‘wickedness’, and therefore apply ‘one-size-fits-all’ approaches to all of them. The result is that any single problem situation has little chance of being
addressed effectively. By contrast, we argue that a more contingent approach is necessary, and we have put forward a typology to enable distinctions to be drawn between different forms of problems. While this in itself will not solve problems, it can assist the identification and adoption of appropriate interventions based on more knowledge and experience of the issues and better relationships among key participants.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

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REFERENCES


SEMAKAU LANDFILL PHASE II


BACKGROUND

Due to land scarcity, Singapore faced the challenge of finding solutions for its expanding waste disposal needs. Before 1979, all waste was sent to landfills on the main island of Singapore. However, with rising affluence and a growing population, generated waste increased more than six-fold from about 1,260 tonnes per day in 1970 to about 8,402 tonnes per day in 2015. To handle this upsurge and slow landfill use, Singapore’s then Ministry of the Environment (ENV) adopted incineration technology. The volume of waste was reduced by over 90% and the incineration ash was disposed into the landfills. The first waste-to-energy (WTE) incineration plant started operation in 1979 and, today, there are four WTE incineration plants with a combined capacity of 7,600 tonnes per day.

While incineration extended the lifespan of the landfills, in the late eighties it was projected that existing landfills would be exhausted by the turn of 20th century and land to create additional landfill sites was unavailable. Singapore’s projected land needs for future housing, industry and recreation led to the National Environment Agency (NEA) building the world’s first-of-its-kind offshore landfill, Semakau Landfill.

Semakau Landfill is located eight kilometres south of the main island of Singapore. Two offshore islands, Pulau Sakeng and Pulau Semakau, were amalgamated to form Semakau Landfill through the construction of a seven-kilometre perimeter bund that encloses 350 hectares of sea space. The endeavour was no ordinary engineering feat given the challenges of constructing a landfill entirely in deep sea. To overcome the obstacles, engineers devised prudent and creative engineering solutions to ensure minimal impact on the surrounding marine ecosystems.

Semakau Landfill development was carried out over two phases, with an internal sand bund dividing them. Phase I was further divided into 11 smaller cells with internal sand bunds. The small cells allowed for ease of landfilling using conventional methods. Covering an area of 178 hectares with a landfill capacity of 11.4 million m³, the landfill space of Phase I of Semakau Landfill commenced on 1 April 1999 and was completed by 2016. (Please refer to the following for an overview of Semakau Landfill Phase 1: https://www.youtube.com/watch?v=jF1UCbS3zY)

To address Singapore’s waste disposal needs, NEA embarked on the Phase II development in 2011 to convert the remaining 157-hectare sea space into landfill space. In July 2015, Singapore’s waste disposal needs received a 16.7 million cubic metres boost, with the completion of the Phase II development of Semakau Landfill.

The Phase II development was highlighted by an innovative design change from the 11 cells design in Phase I to a single cell design in Phase II. The size of Phase II is equivalent to nearly 6,700 Olympic-sized pools, and Singapore now has the capacity to meet its waste disposal needs to 2035 and beyond.

ENGINEERING ACHIEVEMENTS

Phase II features three engineering feats: (i) a single cell layout, (ii) a 200-metre long floating platform and (iii) a floating wastewater treatment plant.

(i) Single cell layout
To minimise the amount of sand used for the construction of cells and maximise the landfill capacity,
a single cell layout is adopted for Phase II. To create the single cell layout, the 160-metre gap at the southern tip of the perimeter bund is closed with the construction of a sand bund. The 160-metre gap was previously open and connected to the open sea to keep the seawater in the cell fresh and clean. The innovative single-cell design resulted in big cost savings in construction and sand costs as there is no longer any need to build internal sand bunds. This enabled NEA to eliminate the difficulty of getting the sand needed to construct the bunds and also contributed to the increase of the landfill capacity, thereby extending the landfill lifespan.

The bund was lined with impermeable geomembrane and a layer of marine clay to ensure that the leachate from the landfill waste is contained within thereby keeping the surrounding sea pollution-free.

(ii) Floating Platform
Developing a single cell to maximise landfill capacity presents occupational hazards regarding landfill operations. The large area and uneven seabed limit the efficiency of conventional landfilling and presents a high risk of waste sliding. To mitigate this, a floating platform was constructed for safe landfilling operations.

The floating platform is used to deposit incineration ash/waste into the Semakau Landfill Phase II Cell to even out and raise the seabed level, reaching a water depth of about two metres. Once achieved, conventional landfilling can be carried out safely from shore without the risk of circular slip failure and waste sliding. The floating platform can be shifted from one location to another location of the lagoon as landfilling operations progress to fill up the single cell. The successful development, commissioning and construction of the floating platform is an efficient method of landfilling in deep water. The floating platform has contributed
to operations since the Phase II cell opening and commencement of landfill operations on 11 July 2015.

(iii) Floating Wastewater Treatment Plant

With closure of the 160-metre gap to form a single cell as part of the Phase II development of Semakau Landfill, flooding risks increased due to prolonged heavy rain and incineration ash/waste dumping into the cell. In response, NEA commissioned the development of a floating wastewater treatment plant that treats excess water in the cell to meet effluent discharge standards and releases the treated water into the open sea surrounding Semakau Landfill. The impounded wastewater, a mixture of seawater, rainwater and landfill leachates, is treated to meet the Trade Effluent Discharge standards. This approach prevents flooding in Semakau Landfill, which would hinder landfilling operations, and ensures minimal environmental damage and pollution to surrounding waters and precious biodiversity.

The wastewater treatment plant is installed on a floating structure two times the size of an Olympic swimming pool and is designed to treat up to 18,000m$^3$ wastewater daily. The operation of the plant is automated and highly reliable. The treatment plant consists of a number of unique systems to sustain discharge water quality and ensure the treatment plant remains reliable, secure and automated for a lifespan of 20 years.
CONSERVATION OF SEMAKAU’S RICH BIODIVERSITY

To protect Semakau Island’s vibrant ecosystem and rich biodiversity, measures were taken to minimise the environmental impact on Pulau Semakau’s natural ecosystems. For Phase I development, the design of the Semakau Landfill perimeter bund resulted in the loss of about 13.6 hectares of mangroves. Upon the recommendation by leading local biologists, some 400,000 mangrove saplings were replanted on two new plots on the northern and southern fringes of Pulau Semakau. These mangroves also serve as biological indicators to detect any waste leakage from the landfill.

In the Phase II development area, NEA also embarked on a coral transplantation project to preserve the marine inhabitants. Due to the presence of fresh seawater in the Semakau Landfill Phase II lagoon, marine habitats developed in the lagoon. In March 2014, NEA commissioned an independent coral reef survey of the lagoon to mitigate threats to the biodiversity in Semakau Lagoon during the development of Phase II. It was recommended that 27 genera of corals be earmarked for transplantation to minimise impact of landfilling operations on the coral reef community. One of these 27 genera is Polyphyllia, which is ranked eighth rarest among the 56 hard coral genera found in Singapore’s reefs.

Table 1: Top 10 coral genera identified from survey and ranked by rarity

<table>
<thead>
<tr>
<th>Genera</th>
<th>Colony Count</th>
<th>Rarity Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyphyllia</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Goniopora</td>
<td>62</td>
<td>16</td>
</tr>
<tr>
<td>Pavona</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Acanthastrea</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>Lobophyllia</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>Turbinaria</td>
<td>9</td>
<td>25</td>
</tr>
<tr>
<td>Oulophyllia</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Porites</td>
<td>34</td>
<td>28</td>
</tr>
<tr>
<td>Astreopora</td>
<td>3</td>
<td>29</td>
</tr>
<tr>
<td>Podabacia</td>
<td>1</td>
<td>30</td>
</tr>
</tbody>
</table>
The process of harvesting and transplanting corals and related reef species was completed over a period of five months from September 2014 to January 2015. A total of 42 genera of hard corals with a total colony count of 761 amounting to 60 m² of live coral cover were harvested from the lagoon and transplanted successfully at the Sisters’ Island Marine Park south of the landfill.

Prior to the transplantation at Sisters’ Island Marine Park, the corals were transferred to a temporary holding area west of Pulau Semakau where conditions were favourable for the growth and survival of the coral colonies. Two rare and threatened reef-associated species were also relocated from the lagoon – Neptune’s Cup Sponge (Cliona patera) and two Fluted Giant Clams (Tridacna squamosa).

A nine-month monitoring programme was established with the objectives of assessing and evaluating the health and survival rate of the relocated corals while assessing ambient environmental conditions pertinent to the wellbeing of the corals, namely water quality and sediment conditions at the recipient sites. No transient or long-term impacts of the transplantation on coral colonies and reef-associated organisms were observed. This NEA biodiversity conservation project was largely successful and represents the agency’s goal of creating a sustainable future for the rich biodiversity present in Singapore.

The NEA implemented strategies to enable Singapore to remain environmentally sustainable by increasing recycling rates and minimising waste generation. Eliminating the production of waste is an essential part of meeting Singapore’s future needs. The ultimate goal is to strive towards a zero-waste situation where the need to build new incineration plants and waste treatment facilities is thoroughly reduced. Waste generation at source and recycling will be at the forefront of NEA’s efforts, with public education, industry collaborations and the implementation of viable...
technologies identified as components of the arsenal employed for waste management.

A PLACE FOR ENVIRONMENTAL PARTNERSHIP AND LEARNING

In Semakau Island, the coexistence of an active landfill and healthy ecosystems offers an ideal launchpad on which to showcase Singapore’s commitment to sustainable development and nurture partnerships with individuals and groups who share this vision. NEA itself practices this principle and officially opened Semakau Landfill to the public for recreational and nature activities. These activities include educational tours, an inter-tidal walk, bird watching, and sport fishing. NEA also invested in a renewable energy system at the southern tip of the landfill bund. Consisting of solar panels and a wind-powered turbine, the system generates electricity to light up the area for nocturnal activities such as stargazing, camping and barbeques.

Semakau Landfill also offers a promising location for the testing of eco-friendly projects, and NEA has welcomed private as well as public proposals that could support or extend its mission to make the facility a showcase and centre for eco-friendly activities and technologies. The sea bass nursery and farm is another example of how Semakau Landfill is giving Singapore a taste of environmental quality through healthy fish reared in the waters by the landfill. The nursery uses water pumped from beneath the nearby pier to raise the young fish. Meanwhile, older fish at the floating cages located just west of the bund grow to marketable sizes in a natural marine environment free from disease and pollution.

Singapore’s success in turning two small islands into an offshore landfill has captured the imagination of the world at large. The sheer novelty of turning two small islands into an offshore landfill and the careful protection of the surrounding natural habitats have drawn the attention of scientists, engineers and leaders from other countries.

One of the first foreign leaders to visit and learn about the design and operation of Semakau Landfill was Datuk Seri Azmi Khalid, Malaysia’s Natural Resources and Environment Minister. Environment ministers from Brunei, Philippines, New Zealand, Japan and the Independent State of Samoa have also visited the site.

The international press corps showcased Semakau Landfill as an example of urban planning and environmental foresight that demonstrates how a small city-state can combine solid waste disposal with nature preservation. The international media such as CNN News, the Discovery Channel, the New York Times, Rod & Line (Malaysia), and Waste Management World have reported on this initiative, and New Scientist Magazine called it the “Garbage of Eden” in a feature article.

Semakau Landfill is serving as an incomparable outdoor classroom. School groups, grassroots organisations, tours by international delegations and dignitaries come to learn how Singapore combined solid waste disposal with environmental sustainability. NEA, through Singapore Environment Institute (SEI) also operates a Programme for Environmental and Experiential Learning (PEEL) that allows members of the public and environment industry professionals to go behind the scenes of Singapore’s solid waste management system through tours to the incineration facilities and the Semakau Landfill.

NEA is committed to promoting long-term environmental sustainability. Semakau Landfill is an excellent success story that showcases sustainable waste management co-existing with thriving marine life and habitats. Singapore’s only landfill represents a balancing feat between physical development and environmental conservation and it is a testament to Singapore’s engineering capability and the success of its novel approach to waste management.
Malaysia has set ambitious goals that will enable it to become a “high-income country by 2020” and provide citizens with a high quality of life. Malaysia’s Vision 2020 statement outlines nine goals encompassing economic, political, social, spiritual, psychological and cultural dimensions of growth. Vision 2020 requires the government to play a key role in steering society through a rapid process of change. It requires public institutions and organisations to be nimble for the times and able to adapt to rapidly changing needs and circumstances. Public sector reforms must evolve in tandem with the transformation that government leaders envision for the country as a whole.

Sarawak, as one of the 13 states in Malaysia, has a critical role. Members of the civil service are required to think forward and implement strategies for change. The task is not just about providing services, but also making services more accessible, more relevant and convenient to the public. In other words, Sarawak Civil Service (SCS) should constantly find new and practical approaches to nurture and create an environment and culture of innovation and creativity through the transformation programme.

SARAWAK TRANSFORMATION JOURNEY

The SCS10-20 Action Plan is a focused and structured roadmap and reference for the SCS in its journey of transformation. The Action Plan complements the transformation programmes introduced at the national level – the Government Transformation Programme (GTP) and the Economic Transformation Programme (ETP). It also aims to meet the target set out under the 10th Malaysia Plan and the goals of Vision 2020. More importantly, this action plan fully supports the State Government agenda to make Sarawak a high-income society through the Sarawak Corridor of Renewable Energy (SCORE) programme and to improve the Sarawak people’s quality of life.

In 2010, the SCS established a vision of becoming a world-class civil service. This vision will be achieved through the SCS mission to deliver excellent service through high-performance teamwork. The vision and mission rely on the strategic thrusts for the SCS – people-oriented, innovative and creative work culture, talented workforce, excellent organisation,
high-performance team, and customer satisfaction. Success in turn depends on civil service members possessing the vital core values of integrity, kindness and caring, professionalism, sense of urgency and ownership, team spirit, and results oriented in carrying out their responsibilities. This transformation framework became the basis for all the initiatives and programmes. One of the first initiatives introduced was the Key Focus Activities (KFA) for all government organisations in the state. Another was the Innovative and Creative Circle (ICC), which places an emphasis on the creativity and innovativeness of members of the civil services in achieving greater productivity.

In 2011, the SCS introduced labs to gather the best ideas and thoughts on talent management. The outcomes and results from the labs provided the journey of transformation with greater focus and drive.

In February 2012, the SCS 10-20 Action Plan was introduced covering seven critical areas to drive the transformation process. The seven areas are Managing Culture Change, Managing Customer Needs, Innovation & Creativity, HR Talent Management, e-Government, Project & Programme Delivery Excellence and Financial Management Transformation.

In June 2013, the 8th Action Plan, Sarawak Excellent Administration of Legal Services (SEALS), was introduced. This completed the cycle of all the key areas in achieving transformation objectives. The High-Performance Team (HPT) Retreat 2013, also introduced HPT solutions that promote inter-agency collaboration to develop quick wins and to enhance service delivery.

**BUILDING INNOVATIVE AND CREATIVE WORK CULTURE**

The state government chose a tagline “Create and Innovate, Make a Difference” as a theme. The real transformation and the real benefit of services to the people and the business community are measured by the outcome and the impact of the SCS delivery. Therefore, there is a need to continuously innovate and create, and to always find better, faster and cheaper ways of doing things to make a difference to our customers, the people and the business community, both local and foreign.

Creating a culture of innovation involves six strategies as follows:

1. **Empowering Innovation**

   Encouragement of innovation and creativity operates through empowerment effort at four levels.

   a. An online “suggestion box” management system called the Sarawak Civil Service-innovative ideas (SCS-ii) was created for any civil servant to submit ideas that improve the service. Employees whose ideas are adopted and implemented are given recognitions and rewards.

   b. **The Innovation and Creative Circles (ICC).** Every agency is required to establish at least one ICC. ICC conventions are held regularly at the different zones in Sarawak and the state-level convention is held annually. ICC teams from the state have represented the country in international conventions for the last three years and have won international awards. The setup of ICC groups in the SCS was made compulsory in the year 2010 through the Circular – KIK Bil. 1/2010. The objective is to improve and increase the quality and productivity of the service delivery system for the stakeholders (people). The ICC not only triggers innovation with creative thinking but also creates a culture of teamwork. In addition, the ICC practice generates excitement and motivation among civil servants to improve the service delivery system through the Business Process Improvement (BPI) and the Business Process Reengineering (BPR).

   c. **The Key Focus Activity (KFA).** The KFA allows top management to address the higher-level issues affecting the agency. The CEO of each agency is required to identify issues that necessitate the involvement of top management to resolve. Every SCS agency must propose
at least one KFA per year, and the state recognises and rewards the best every year. The objectives of the KFA are to: undertake major process improvements to the agency’s service delivery; and develop, review and improve the existing process, systems and procedures in order to facilitate the State Civil Service Transformation Plan.

d. An inter-agency team is created. Three mechanisms are employed. The Hybrid ICC brings together employees from the relevant agencies to address operational issues. The hybrid KFA involves senior management participation of the relevant agencies to address high-level issues that straddle agencies. The HPT Solutions is the highest form of inter-agency collaboration. It involves the CEO, and addresses high-priority and high-impact issues. Recognitions and rewards are given for the best HPT solutions every year. The objectives of the HPT Solutions are:

- To break down silos in the government by providing an environment for heads of government agencies to collaborate, to discuss and to solve critical issues affecting the State and the people in their daily work;
- To have the heads of government agencies take charge of issues affecting their agency and its service to the people; and
- To have the heads of government agencies be personally and directly involved in addressing and resolving issues affecting their agencies.

With these mechanisms in place, the SCS provides avenues for all levels of employees to propose useful and innovative ideas: as an individual, as a member of an operational team, as a member of an agency’s top management, and as a member of an inter-agency team, as shown in Figure 2.

2. Governance Structure
Creativity and innovation require a strong commitment by management and the support group to sustain the momentum for its successful implementation. Top management needs to spearhead and enforce these initiatives to ensure that the organisation internalizes and sustains the transformation momentum.

The SCS Transformation Steering Committee drives and monitors the transformation initiatives. The roles of this Committee are as follows:

*Figure 2: SCS innovation and creativity mechanisms continuum*
• To formulate policies and guidelines pertaining to the transformation of the Sarawak Civil Service;
• To provide guidelines and steer the implementation of Transformation initiatives in the public service;
• To monitor and evaluate the effectiveness and efficiency of Public Service delivery intervention programmes;
• To endorse and approve matters forwarded by all committees; and
• To oversee the Divisional transformation committees

To ensure the success of each initiative, the following sub-committees were established:

a. **Sarawak Civil Service Innovative ideas (SCS-ii) Committee** – to oversee the following:
   - Promote the culture of innovation and creativity in the civil service;
   - Formulate policies and directions for Sarawak Civil Service Innovative Ideas (SCS-ii) initiatives;
   - Evaluate and approve submitted ideas;
   - Recommend further requirements and rectifications;
   - Recommend mechanism for the implementation of approved ideas;
   - Recommend the recognition and award scheme for the SCS-ii;
   - Conduct post implementation evaluation;
   - Finalize award winners; and
   - Monitor post implementation of the initiatives.

b. **ICC Projects Implementation Committee** – to provide consultation and leadership in the implementation and standardisation of ICC projects with the following responsibilities:
   - Formulate policies relating to the implementation and standardisation of ICC projects;
   - Provide funds for the implementation and standardisation of ICC projects;
   - Monitor and evaluate the effectiveness and efficiency of ICC projects to the civil service; and
   - Patent innovative projects.

c. **Key Focus Activity (KFA) Technical Committee** – to monitor the implementation of the proposed KFA projects as follows:
   - Execute policies and guidelines on KFA set by the State Innovation & Creativity Committee;
   - Monitor the progress of agency’s KFA activities and programs;
   - Guide and monitor all State agencies in the implementation of KFA; and
   - Report on KFA achievements to the State Innovation and Creativity Committee for endorsement or approval.

3. **Cascading and Promotion**

Q-Visit is one of the initiatives of the State Government intended to cascade and promote the practice and implementation of State transformation initiatives at the agency level. It is also a mechanism to drive the innovative and creative spirit as well as the means to ensure a continuous culture of quality at all levels of the SCS. Q-Visits are a reflection of the government’s determination to ensure the success of the transformation of the civil servants to always deliver excellent services to the people.

Q-Visit is a two-pronged program with the following objectives:

- To create an understanding on the SCS Transformation, especially the SCS 10-20 Action Plan and to get direct feedback regarding its implementation; and
- To strengthen and fuel the spirit of innovation and culture of quality as well as to closely observe the practice of quality initiatives and innovation at the organisational level.

4. **Provide Support System**

To ensure the sustainability of the innovative work culture, the State Government has put in place
support systems such as:
• Training programmes (awareness, skill development and mentoring);
• Consultation and guidance (workshops, seminars and knowledge sharing);
• Technology support (SCS Transformation Portal, KFA Portal, SCS-ii Portal and ICC Portal);
• Manuals (guidelines, brochures and circulars); and
• Communities of practice (COP)

5. Collaboration and Integration
Creativity and innovation in re-engineering processes often necessitate the involvement of multiple agencies, and collaboration and integration of processes and procedures between these agencies.

The HPT retreat is organised annually to discuss topics considered critical to the state. The HPT approach is also a framework for heads of agencies to discuss inter-agency issues at any time during the year, with its use is not confined only to the annual retreats.

6. Inculcate Shared Values
Managing culture change is an effort to inculcate an organisational culture of excellence in the Sarawak Civil Service. The organisational culture corners Six Shared Values, which are Integrity, Kind & Caring, Professionalism, Sense of Urgency & Ownership, Team Spirit and Result-Oriented. This culture aims to cultivate engagement and enthusiasm among employees, create organisation openness to new ideas and willingness to take risks directly related to innovation.

ACHIEVEMENT
The results of the SCS innovative and creative effort are shown in the following tables:

<table>
<thead>
<tr>
<th>Table 1: Total of HPT Solutions projects from 2013-2015</th>
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<tr>
<td><strong>HPT Solutions</strong></td>
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<tr>
<td><strong>No.</strong></td>
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<td>1</td>
</tr>
<tr>
<td>2</td>
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<tr>
<td>3</td>
</tr>
<tr>
<td><strong>Total Projects</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Table 2: Number of Active ICC groups in Sarawak</th>
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</thead>
<tbody>
<tr>
<td><strong>ICC Achievements</strong></td>
</tr>
<tr>
<td><strong>Agencies/Year</strong></td>
</tr>
<tr>
<td>State Agencies</td>
</tr>
<tr>
<td>Federal Agencies</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 3: Total of KFA projects 2010-2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KFA Achievements</strong></td>
</tr>
<tr>
<td><strong>Category</strong></td>
</tr>
<tr>
<td>Ministry</td>
</tr>
<tr>
<td>Unit In Chief Minister’s Department</td>
</tr>
<tr>
<td>State Departments</td>
</tr>
<tr>
<td>Resident Offices</td>
</tr>
<tr>
<td>Local Authorities</td>
</tr>
<tr>
<td>District Councils</td>
</tr>
<tr>
<td>Statutory Bodies &amp; GLCs</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>
RECOGNITION

SCS has received recognition and awards at both national and international levels.

IMPACT

The State Government has implemented some projects from the innovative and creativity initiative as follows:

Patented Innovation
SmartPEG/ SARAPEG (by Sarawak Land & Survey Department) – a peg for marking the boundary of control made from thermo-plastic. It is eco-friendly, lightweight, modular and detectable.

Replicable and Adaptable Innovation
EZ Bucket 1.0 (Dalat & Mukah District Council) – used for maintenance work, especially for trees that have reached a height that is difficult to trim. The work can be done efficiently and effectively. It is also environmentally friendly.

Q-Easy Kiosk (Land & Survey Department, Limbang Division) – an electronic attendance system to replace the manual system, which automatically generates attendance reports.

Pontoon C-Flex H2O Intake (Public Works Department of Sarawak, Bintulu Division) – ensures a clean, treated water supply that be channelled directly to villagers in rural areas. The maintenance cost is low.

Table 4: Total numbers of SCS-ii registered ideas 2010-2015

<table>
<thead>
<tr>
<th>No.</th>
<th>Year</th>
<th>Number of Ideas Submission</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2010</td>
<td>13</td>
</tr>
<tr>
<td>2</td>
<td>2011</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>2012</td>
<td>88</td>
</tr>
<tr>
<td>4</td>
<td>2013</td>
<td>13</td>
</tr>
<tr>
<td>5</td>
<td>2014</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>2015</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Projects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>142</td>
</tr>
</tbody>
</table>
**Process Improvement and Innovation**

*Table 5: Examples of some impactful projects.*

<table>
<thead>
<tr>
<th>No.</th>
<th>Agencies</th>
<th>Title</th>
<th>Objective</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kuching South City Council (MBKS)</td>
<td>To review the process on approval and issuance of Occupation Permit (OP) so as to reduce from 30 working days to 2 working days.</td>
<td>To improve Council service delivery by issuing Occupation Permit within 2 working days with cooperation from the consultants and developers. The consultant is assigned greater responsibility and accountability.</td>
<td>Occupation permit (OP) reduced from 30 working days to 2 working days</td>
</tr>
<tr>
<td>2</td>
<td>Ministry of Public Utilities Sarawak and Sarawak Energy Berhad (SEB)</td>
<td>Reduce State- wide electricity theft from 7% to 4% of Total Energy Generated within 18 Months.</td>
<td>To reduce state- wide electricity theft on an average of 1% half-yearly.</td>
<td>Reduction of 2% in electricity theft. (Savings of RM36 million to SEB).</td>
</tr>
<tr>
<td>3</td>
<td>Ministry of Local Government and Community Development of Sarawak (LGCD)</td>
<td>Reduction in arrears of rates.</td>
<td>To reduce the total arrears of rates by 30% on average.</td>
<td>Successfully achieved RM 12,157,795.79, which is equivalent to 27% of the total arrears of rates recorded.</td>
</tr>
<tr>
<td>4</td>
<td>Kuching North City Hall (DBKU)</td>
<td>Involvement Of local communities In grass cutting and drain cleaning.</td>
<td>a) Empower the community, granting projects/work (inclusiveness). b) Improve the quality of life. c) Assist “Urban Poor”.</td>
<td>a) Establishment of guidelines – specifications and standards of grass cutting and drain cleaning. b) Increase of income within the community. c) Greater productivity and work quality.</td>
</tr>
<tr>
<td>5</td>
<td>State Attorney-General’s Chambers Virtual Office (VO) – A Multimedia conference solution for judiciary.</td>
<td>(a) Enable all legal officers in the chambers to attend court cases from the offices. (b) Avoid wait- times and reduce the necessity to travel to outstations.</td>
<td>(a) VO system had been implemented to the judiciary branches of the State and the court cases can be held at the same time. (b) Cost and time saving.</td>
<td></td>
</tr>
</tbody>
</table>

**CONCLUSION**

Inculcating the culture of innovation and creativity through a systematic approach, such as; innovation empowerment, governance structure establishment, cascading and promotion, provision of support systems, collaboration, integration and enculturation of shared values, propels greater productivity and effectiveness in achieving development objectives.
CAPAM invites contributions from professional educators, senior public servants and consultants from across the Commonwealth for the organisation’s quarterly publication *Commonwealth Innovations Review*

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CAPAM considers the following types of articles for publication in the CIR:

- **Academic article or paper (5,000-8,000 words)**
  These articles typically involve primary research and may include: original research papers; concept papers; article reviews; and literature reviews if they contain significantly new information and generate significantly new knowledge.

- **Feature (3,000 to 6,000 words)**
  These articles typically involve secondary research and could include: concept papers; descriptive research; article reviews; and literature reviews.

- **Opinion articles (2,000 and 4,000 words)**
  These articles should be written in first-person narrative style. The author’s personal views and conclusions should be based on the author’s subject matter expertise and experience on the topic.

CAPAM seeks cross-Commonwealth participation and invites authors from different backgrounds, cultures, and educational beliefs to contribute. Academic rigor and writing quality is required and cannot be compromised.

For more information, or to submit an article, please refer to the detailed guidelines at [www.capam.org](http://www.capam.org), or contact:

*Gay Hamilton, CEO*
ghamilton@capam.org
Transforming the Public Sector for Climate Governance

CAPAM 2018 Biennial Conference
22-24 October
Georgetown, Guyana

#CAPAM2018Biennial

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Internal/inward-facing to government and consist of functional or whole-of-system policies or business processes.

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Comparing Strategies of (De)Politicisation in Europe Governance, Resistance and Anti-politics

*Editors: Buller, J., Donmez, P., Standring, A., Wood, M. (Eds.)*
*Publisher: Palgrave Macmillan*
*ISBN 978-3-319-64236-9*

This book investigates the extent to which depoliticisation strategies, used to disguise the political character of decision-making, have become the established mode of governance within societies. Increasingly, commentators suggest that the dominance of depoliticisation is leading to a crisis of representative democracy or even the end of politics, but is this really true? This book examines the circumstances under which depoliticisation techniques can be challenged, whether such resistance is successful and how we might understand this process. It addresses these questions by adopting a novel comparative and interdisciplinary perspective. Scholars from a range of European countries scrutinise the contingent nature of depoliticisation through a collection of case studies, including economic policy; transport; the environment; housing; urban politics; and government corruption. The book will be appeal to academics and students across the fields of politics, sociology, urban geography, philosophy and public policy.

Available at: https://www.palgrave.com/de/book/9783319642352

The New Synthesis of Public Administration Fieldbook

*Jocelyne Bourgon*
*Publisher: Dansk Psykologisk Forlag*
*ISBN 978-87-7158-582-7*

“What do we need to do to ensure that government has the capacity to invent solutions to the problems facing society? How can government keep pace with the increasing complexity of the world we live in? How can public sector leaders uncover government actions that generate results of increasing value for society? The key is to do systematically what many public sector leaders do instinctively from time to time. The central steps include positioning to rise above an agency-centric focus and reconnect actions and decisions to public purpose and societal results. It uses the authority of the State and available resources and capabilities for leveraging the contribution of others and propelling society forward. Engaging and citizen-centricity unleash the civic capacity and the civic will for collective problem solving. This ensures that solutions are sustainable by sharing the responsibility with citizens and others. Synthesising is used to generate a powerful narrative of change. It is the narrative of a society, able and willing to invent solutions and build a better future together. The New Synthesis of Public Administration Fieldbook signals the need for a set of important conversations to re-think public innovation, re-frame leadership in a public sector setting and discuss probing questions on economic theories and democratic principles.”

Available at: https://www.amazon.ca/dp/8771585826/ref=sr_1_1?ie=UTF8&qid=1506025081&sr=8-1&keywords=new+synthesis+fieldbook
Systems Approach to Public Sector Challenges: Working with Change

OECD (2017)
OECD Publishing, Paris

Complexity is a core feature of most policy issues today and in this context traditional analytical tools and problem-solving methods no longer work. This report, produced by the OECD Observatory of Public Sector Innovation, explores how systems approaches can be used in the public sector to solve complex or “wicked” problems. Consisting of three parts, the report discusses the need for systems thinking in the public sector; identifies tactics that can be employed by government agencies to work towards systems change; and provides an in-depth examination of how systems approaches have been applied in practice. Four cases of applied systems approaches are presented and analysed: preventing domestic violence (Iceland), protecting children (the Netherlands), regulating the sharing economy (Canada) and designing a policy framework to conduct experiments in government (Finland). The report highlights the need for a new approach to policy making that accounts for complexity and allows for new responses and more systemic change that deliver greater value, effectiveness and public satisfaction.

Available at: http://dx.doi.org/10.1787/9789264279865-en

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