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Lessons for Mega Transport Project Developments and the Future of UK Cities and Regions

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November 2015

This paper has been commissioned as part of the UK Government's Foresight Future of Cities Project. The findings and views contained herewith are those of the authors and do not represent the policy of any government organisation or funding party. They are drawn from an Executive Summary Report produced by the OMEGA Centre at the Bartlett School of Planning, University College London, based on a six year international research programme of 30 case studies in 'Decision-making in the Planning, Appraisal and Delivery of Mega Transport Projects' in Europe, Australasia and North America funded by the Volvo Research and Education Foundations (VREF), Gothenburg.

1.0 Introduction

The Introduction to the UK Government's Foresight Future of Cities project emphasises the importance of UK cities and city regions as principal concentrations of the country's population, trade, commerce, cultural and social life. UK cities and their regions are also major centres of communication, transport, consumption, economic productivity, finance, knowledge, education, governance and innovation. In this sense, they furthermore represent critical engines of growth via national and regional development that need to be planned, managed and nurtured in line with prevailing public policy and concerns for market forces. The effective performance of these city/city-regional functions is critically dependent, however, on the provision, management, and distribution of suitable infrastructure systems and their associated services, including those of the transport, water, sewage, energy and communication sectors amongst others.

Of late, much has been written and discussed both nationally and internationally about the 'infrastructure deficit' of cities, city regions and indeed nations too. In an attempt to bridge some of this investment gap, a number of mega transport projects (MTPs)[1] have been proposed and planned in the UK against a backdrop of rapid urban population growth, rising global economic competitiveness and increasing social and environmental challenges. Reflected in Infrastructure UK and HM Treasury's recently published 2015 National Infrastructure Plan Project Pipeline (see www.gov.uk/government/publications/national-infrastructure-pipeline-july-2015) these projects involve huge commitments of national and local resources (financial and otherwise) that have promised much but which have also attracted increasing scrutiny, and in some cases controversy.

With transport being by far the largest of the infrastructure sectors represented by the Infrastructure Plan Project Pipeline in terms of number of projects (302), and the second largest in terms of expenditure required (at £127.44 billion), the rising expectations and optimism associated with many of the MTPs featured in this pipeline have spawned concerns and even tensions in some quarters regarding the value for money they offer, the opportunity costs they pose and the risks and uncertainties they potentially present as the scale, cost and complexities of such projects increase. These concerns and tensions have been especially associated with their rising costs evoking consideration of the past history of alleged MTP cost-overruns and delays in delivery (see Merrow, 1988; Flyvbjerg *et al,* 2003)Other parties, including the authors, have taken a more sanguine position regarding concerns of finishing projects on time/budget and to specification – collectively coined by Martin Barnes in 1969 as the 'iron-triangle' of project management (Weaver, 2009). It is argued that while in certain circumstances criticisms of project performance against 'iron-triangle' criteria may be justified, too often the prevailing negative narrative regarding megaproject delivery and the 'iron-triangle' framing of project 'success' fail to provide a holistic assessment of the true value of such projects, particularly as regards to their potential role as 'agents of change' and impacts on urban agglomeration, for example (Dimitriou *et al*, 2013). It is contended here that the focus on project delivery can omit (in any meaningful way) the long and broad view of project outcomes and related impacts.

[1] For the purposes of this paper, MTPs are defined as "land-based transport infrastructure investments within and connecting major urban and metropolitan regions in the form of bridges, tunnels, road and rail links, or combinations of these. They are projects that entail a construction cost of over US$ 1 billion (at 1990 prices) … and are frequently perceived as critical to the 'success' of major urban, metropolitan, regional and/or national development (OMEGA Centre, 2012: 2) often seen as a different breed of projects (Capka, 2004).

Building on this position, and drawing on the findings of the OMEGA Centre (see OMEGA Centre, 2008 and 2012), the authors argue that framing the planning and appraisal of MTPs in this broader strategic way enables important *new* insights to be made by exploring how potential outcomes and impacts may vary under different scenarios, as well as scrutinising the resilience of existing proposals in the face of increasing global *and* local challenges of sustainable development; so essential in climates of increasing risk and uncertainty that the 21st century presents. They further argue that by the use of broader decision making paradigms, such as Policy-led Multi-Criteria Analysis (PLMCA), for example, an approach of this kind offers a framework/platform for not only planning and appraising new projects but also to re-appraise MTPs already in their operational phase (with a view to future retro-fitting) (Dimitriou *et al*, 2016). Depending on the stakeholder interests in question, this can be achieved by setting the planning and appraisal exercise(s) against prevailing concerns regarding, for example, project impacts on/ contributions to climate change as well as social cohesion and equitable development goals, undertaken in a manner that more effectively informs sponsors of how such projects may be judged sustainable.

In seeking to substantiate the above call for the re-positioning of the planning and appraisal of MTPs, the authors draw on the evidence-based lessons, as summarised below, which encapsulate the findings of a six year international research programme focused on decision-making in the planning, appraisal and delivery of 30 MTPs in ten countries - in Europe, Australasia and North America (see OMEGA Centre 2011 and 2012). These lessons draw on a systematic analysis of public domain material plus the narratives of some 300 project stakeholders interviewed for the research. As will become apparent from the ensuing text, the lessons collectively call for the reframing of MTP proposals in more holistic terms in a manner that represents a sea-change in how the 'success' of MTPs could be judged. This perspective moves *dramatically* away from the focus with project management performance criteria of MTP delivery to *also* embrace concerns and criteria of project outcomes and impacts. In this sense, the 'success' of MTPs are not only viewed in terms of the physical infrastructure investment outputs that have the potential to facilitate/improve the more efficient movement and distribution of traffic *but* also in terms of offering (desirable) transformational development outcomes and impacts on the territories, communities, environments and economies they traverse, thereby acting as 'agents of change' of social, environmental, economic and physical developments.

What this broader perspective especially highlights, whether it be for cities and city-regions in the UK or elsewhere, is that among all the narratives about the 'success' (or otherwise) of MTPs, the fact is that the vast majority of them *inevitably* create project 'winners' and 'losers' over time and space; and that despite the rhetoric, *very* rarely can all parties be 'winners'. What the OMEGA lessons also emphasise is the importance of the 'power of context' on MTP decision-making at different stages of the project life-cycle. Research conducted by the OMEGA Centre reveal that judgements regarding project 'success' are *hugely* impacted not only by changing policies, plans and regulations promoted and enforced by government but also various influential lobbying parties and project political champions. Other important contextual forces impacting MTP decision-making include: new technologies (of various kinds, especially IT), global competitive market forces and changing economic climates (of both downturns and upturns) that typically determine the availability (or otherwise) of project funding, especially from the private sector. Together, these forces mold the decision-making context(s) and stakeholder decision-making spaces for MTP developments which by their very nature, alter over time on account of changing economic climates/realities, societal values, government administrations/policies and increasing

access to information. As Hall (1980) attests, such developments can result in outcomes and outputs of a particular MTP being pronounced a colossal "success" at one point in time, and in a later era (as new knowledge, technologies and/or economic circumstances emerge) judgements can be made in quite the opposite way and vice versa.

2.0 OMEGA Centre Lessons

Elaborating on the points made above, a summary of the OMEGA Centre Lessons in decision-making in the planning, appraisal and delivery of MTPs is provided below as to how one might re-frame the planning and appraisal of MTPs – particularly in UK city and city-regional contexts - in light of the evidence-based lessons arrived at from this case study research. The authors consider these lessons a useful platform for offering new and more holistic perspectives, capabilities and tools which are needed to support enhanced MTP decision-making for UK cities and regions - both for the short-run and in the long term. Clustered around nine themes, the lessons which follow potentially have important implications for all the six earmarked areas of concern of the UK Government's *Foresight Future of Cities Project*, namely: living in cities, urban economies, urban metabolism, urban form, urban infrastructure and urban governance.

Lesson 1: Mega Transport Projects as 'Agents of Change'

There is a need for a change of mind-set concerning the way in which MTPs are positioned, framed and planned.

The above position is argued on grounds that MTPs in the UK (and elsewhere) frequently become critical 'agents of change' (either by design or by virtue of the nature and extent of their impacts) with multiple spatial, economic, environmental and other implications. OMEGA case study findings suggest that the potential for such projects to change the context into which they are placed is often under-appreciated which can result in unexpected or unintended consequences, either of a beneficial or problematic nature. The authors argue that such outcomes reflect the rather narrow framing of projects solely as providers of transport infrastructure *without* sufficient understanding and adequate attention being paid to their realistic capability to directly or indirectly stimulate urban regeneration and wider spatial and sectoral change. The authors contend that conversely, where projects were positioned (at some stage of their development or other) as *components* of broader 'agent of change strategies' they have much more positive outcomes – even where such 'agent of change' objectives were *not* part of the initial raison *d'etre* of such projects.

Lesson 2: MTPs as 'Open Systems'

Planning, appraisal and delivery agents need to recognise that MTPs are phenomena that require 'open systems' treatment in light of their complex and fluid relationship with the areas, sectors and communities they serve, traverse and impact.

MTPs should ideally be seen as 'open systems' as a result of their continuous interaction and interdependency with the changing 'context(s)' they serve, traverse and impact upon – including their environmental, social, economic, physical, institutional and political contexts. Findings of the OMEGA case studies revealed, however, that decision-making in over a half of the projects studied treated MTPs as 'closed systems' during *both* their planning and

implementation stages. This made it difficult to adequately appraise them as a constituent of the wider and more complex context into which they are placed. It was also observed that in so doing that legitimate stakeholder involvement in decision-making was frequently found to be *very limited* or even absent, resulting in the substantial underestimation of potential project impacts, ultimately leading to significant lost opportunities and downside risk of stakeholder opposition.

Lesson 3: MTPs as 'Organic' Phenomena

MTPs are 'organic' phenomena (rather than static artefacts) and often need 'time to breathe' (a period of reflection) in their preparation which can present special opportunities that should be seized and exploited by key decision-makers.

The evidence provided by the OMEGA case studies, suggests that most MTPs are subject to an 'organic', evolutionary process that often produces a fundamental change in the *raison d'etre,* scope and scale of the project. This organic process is frequently necessary to enable such projects to respond to changing contexts (Lesson 5), ideas, political agendas and visions of future possibilities. Given the organic characteristics of these MTP developments, whereby such projects cease to be seen solely in terms of static engineering artefacts, and given the period of reflection ('time to breathe') they often require in decision-making (particularly for larger and more complex projects), the long gestation period that is commonly experienced for such projects need *not* necessarily be considered ineffective. This conclusion is contrary to the 'iron-triangle' narrative that views almost all delays as not only costly but indices of 'failure'. Notwithstanding the significance of this lesson, it is *very* important to appreciate that the 'time for reflection' should be well managed to ensure a genuine re-examination of past decisions and future direction involving key MTP stakeholders.

Lesson 4: The Framing of MTPs

The changing demands placed on MTPs can make it excruciatingly difficult to judge their successes and failures. This makes it imperative to ensure proper project framing so as to enable their appraisal to be based upon a fair and transparent foundation.

As earlier emphasised, the most common criteria employed for judging MTP 'success' are those associated with completing projects on time, on budget, and to specification. Notwithstanding this, findings from the research reveal that such criteria are capable of providing a partial (albeit important) basis for such judgments and, furthermore, can be more important for certain stakeholders than others, namely: the project sponsors, investors and construction parties. Such entities typically exclude other stakeholders more concerned with social and environmental project impacts and outcomes, especially over the long-run of an inter-generational kind.

Lesson 5: The Power of Context

Context awareness and sensitivity to context on the part of project decision-makers is vital for both the successful planning, appraisal and delivery of MTPs and suitable treatment of contextual risks, uncertainties and complexities.

OMEGA Centre case study findings highlight two important facts concerning 'the power of

context' and its relationship with megaproject decision-making. This first is that the context of individual decisions and events impacting on MTP planning appraisal and delivery is essentially *always* unique. The second is that 'context' embodies many and various dimensions for decision-making, including: culture and societal beliefs/values, time and space dimensions, economic circumstances, institutional frameworks and networks and political influence. Faced with these facts, the authors advocate that MTP planning, appraisal and delivery agents need to acknowledge the importance of undertaking periodic sensitivity analyses of the context(s) of decision-making over the *entire* project lifecycle. This is argued since contextual changes *invariably* drive pivotal decisions that affect project outcomes. In so doing, such organisations would be acknowledging context awareness as a key factor in 'successful' decision-making to address the risks, uncertainties and complexities that characterise MTPs.

Lesson 6: Role of sustainable development visions

The lack of a clear and shared vision of the meaning of 'sustainable development' threatens to seriously undermine the potential for MTPs to make a positive contribution to their achievements.

The OMEGA case studies revealed a significant lack of clarity and consensus regarding the operationalisation of sustainable development visions for MTPs thereby posing a number of critical challenges for their planning, appraisal and delivery (OMEGA Centre, 2010). These especially include questions about whether such projects can effectively, on an intra and inter-generational equity basis, address concerns such as those related to: environmental and ecological disruption, fuel scarcity, emission outputs and climate change and carbon footprint outcomes. The sustainable development vision(s) that prevailed at the time of the OMEGA case studies planning, appraisal and delivery were not seen to provide adequate frameworks for either setting-up their project objectives or judging their subsequent 'success'. Addressing sustainability concerns was made more problematic by the noted existence of significant institutional and professional barriers and silos that inhibited the application of 'holistic' sustainable development visions to MTP developments. However, these findings need to be tempered by the fact that all the case studies reviewed were projects completed *before* the year 2000 when the conceptualisation and related metrics of the sustainable development paradigm were in their infancy. This contrasts with today which benefits from guidance offered by the United Nations (UN) in their recently published report on sustainable development (UN, 2015) (see https://sustainabledevelopment.un.org/post2015/transformingourworld/publication).

Lesson 7: Engaging with MUTP stakeholders

Effective engagement with key project stakeholders is a critical activity in MTP planning, appraisal and delivery as this presents important opportunities to manage/mitigate risk, uncertainty and complexity, and more specifically, assist in the adjustment of project objectives so as to address manifold contextual influences, manage expectations and help progress the project delivery process.

It is very clear from the OMEGA case study findings that discerning and analsing key project stakeholder motives, agendas and levels of influence on MTP developments is *never* easy – not least because they are also subject to change over time (see Lessons 3 and 5). These difficulties are compounded by the likelihood that relationships amongst and between

stakeholders will also change over the project lifecycle. There is, as a result, a need for MTP planning and delivery agents to undertake *frequent* scans of stakeholder decision-making environments and interests to assess the willingness, ability and capacity of different groups and networks to exert critical influence on pivotal decisions. Building (and maintaining) relations with key stakeholders is seen as critical to such exercises. These efforts are, however, dependent upon the establishment of trust, credibility and transparency on the part of project sponsors with affected parties; all important in creating consensus. There is evidence from many OMEGA case studies to suggest that such consensus-building is especially invaluable at the *preliminary* stages of MTP developments. As a corollary, it is recommended that MTP planning and delivery agents need to identify those pivotal decisions which require a high level of trust to be established.

Lesson 8: Institutional, policy and legislative support

MTPs are unlikely to be able to deliver the full range of agent of change benefits unless accompanied by a suitable institutional, policy and legislative framework.

Whether such a framework is bespoke or represents an adaptation or extension of currently available institutional, policy and/or legislative arrangements, the OMEGA case study findings point to the critical requirement for them to be transparent and accountable *from the outset* and over the medium-long term. This is advocated despite (or perhaps because) all too often these qualities are missing. With this in mind, it is recommended that such frameworks need to be capable of especially addressing the wide-ranging variety of expectations and aspirations that MTPs inevitably engender. It also needs to be capable of attending to the multiple territorial, sectoral and stakeholder interfaces with which the project planning, appraisal and delivery processes have to deal. Many of the case studies reviewed suggest that the effective development and resourcing of such frameworks requires the *sustained* support of political champions capable of maintaining the project's momentum and building consensus across a variety of interests as a basis for reconciling conflicting/competing stakeholder agendas. Failure to achieve this in any meaningful way could lead to increased risks, uncertainties and complexities for MTP decision-making. At worst, it can lead to an almost complete inability of sponsors to deliver on project objectives, aspirations and expectations.

Lesson 9: Post-project evaluation

There are very few examples of meaningful post-project evaluation going beyond simple time/cost/specification assessments of project performance. Yet, OMEGA Centre research indicates that more extensive lesson learning and sharing derived from project experiences can be most valuable if correctly applied and placed in the public domain for all to benefit.

OMEGA case study research findings point to the fact that lesson learning and sharing is a matter which is treated most seriously by *some* of the larger private sector parties involved in MTP developments globally. The well-organised of these consciously exchange and share key project experiences *within* their organisations internationally. Such lessons are, however, often seen (and thus treated) as commercial assets offering competitive advantage which, as a result, are not widely shared outside the corporate environments of the companies in question. Interestingly, the same research reveals that more could be done to share lessons in the public sector. Here it was observed that too few formal mechanisms (and resources) are in place to enable effective lesson learning and sharing

among many of the public agencies involved in MTP developments beyond the exchange of anecdotal evidence by involved personnel. A further concern observed is the limited sharing of megaproject experiences between the public and the private sector, and among the infrastructure sectors of transport, water, energy, IT etc, whether they be in the public or private sector. Where these circumstances prevail they can affect the potential for the application of new innovations *across* sectors in megaproject developments and affect the ability of all parties concerned to systematically capitalise on past experiences to mutual benefit. It is therefore advocated that megaproject-based lesson learning and sharing be systematically integrated into MTP decision-making through the design and development of agency data retrieval information systems that provide platforms and capabilities for disseminating all registered lessons learned by the full spectrum of stakeholders *throughout* the project lifecycle. The aim here should be to build a knowledge base extracted from MTP case histories world-wide that reflect 'good practice' that will subsequently help future MTP decision-makers better address decision-making risks, uncertainties and complexities, and the influence of context on these. The costs of setting up and maintaining such systems are likely to be *very* small indeed in comparison to the costs of any individual MTP investment.

3.0 Conclusions

3.1 What constitutes a successful MTP?

As is apparent from the above discussion, the simple question of what constitutes a 'successful' MTP' as it applies to UK cities and/or city-regions – indeed anywhere - demands many varied and interrelated responses. A first tier 'strap-line' response, however, could be: 'a project that demonstrates an understanding of how well risk, uncertainty and complexity is treated in the decision-making process in its planning, appraisal and delivery, meanwhile acknowledging the importance of the impacts of changing contexts on these developments'.

For the UK, this acknowledgement of 'the power of context' on MTP decision-making is *most* important given the country's increased reliance on both the market and the private sector in financing and delivering mega infrastructure projects of all kinds. These new contextual realities, if sustained, will require MTP promoters and stakeholders to alter/adapt their past understanding of megaproject risks and uncertainties (as well as opportunities) and practices in light of these developments.

On the premise that increasingly risks and uncertainties (as well as opportunities) of MTP developments have their roots *outside* the traditional perceived boundaries of a project, the perpetuation of restrictive 'business case' judgements of the kind typically employed in UK MTP developments that essentially de-emphasise 'non-business' case considerations can devalue the contributions of those planners, project managers and engineers who seek to take a more holistic and long term approach. This in turn, it is contended, affects the opportunities civil society has to use such projects to transform the economies, territories and cities they serve in line with more sustainable outcomes. This is especially so where many 'so called' MTPs are *not* projects in the traditional sense of the term but programmes of projects (sometimes even programmes of mega projects – i.e., 'metaprojects') that become significant 'agents of change' requiring a much broader view of 'success' as is evident in all complex projects intended to perform strategic development functions, such as by illustration HS1, HS2 and Cross-Rail 1 and 2. Seen in this light, it is *imperative* that proper project framing is employed for MTPs that facilitate, even promote, appraisals based

on broader and more transparent and sustainable criteria than those more typically associated with 'iron-triangle' project delivery concerns. To help capture these dimensions and encourage more holistic thinking, the authors advocate the adoption of policy-led MCA frameworks and attendant processes (see Dimitriou et al, 2016) as a basis for decision-making throughout *all* stages of a project's lifecycle.

Additionally, to instill a greater level of resilience and robustness into MTP decision-making, as earlier indicated, such projects require the establishment of suitable institutional, policy and legislative frameworks that are *sustained* throughout the project lifecycle. These need to more than simply ensure project operational efficiency, viability and affordability if MTPs are to fulfil broader transformational roles. Where such projects are financed on the basis of public private partnerships (PPPs) and/or public finance initiatives (PFIs), OMEGA Centre research observed that expectations of the transfer of financial risks were not always realistic. For these issues to be addressed there is a need for a mutual appreciation among key MTP stakeholders as to who is best placed to accept particular risks (and when). OMEGA case study research findings suggest that it is the public sector which is often better able to take-on long-term risks and the private sector, short-term risks. These points have been emphasised in the case of the HS1 project in relation to the regeneration plans of the Thames Gateway, the Jubilee Line Extension project in relation to the redevelopment of Canary Wharf and potentially (on-going) in the case of the Northern-Line Extension Project in relation to the Battersea Power-station redevelopment scheme.

3.2 Who should do what differently?

The lessons offered above suggest the need for concerted action by *all* key MTP stakeholders. They in particular point to the need for important changes in ways of thinking about MTPs and their development processes. The text which follows describes critical responses needed from four main groups of stakeholders: politicians; public sector officials; private sector personnel; and other key MTP stakeholders.

3.2.1 Politicians

Findings of the OMEGA case studies point to politicians as clearly having a *most* significant role in decision-making for MTP planning, appraisal and delivery. They suggest three key areas where politicians can make an enhanced contribution:

- by adopting a more open view about the capabilities and impacts of such projects;
- by providing strong and sustained leadership in regard to such capabilities; and
- by increased participation in information gathering, scrutiny and sharing concerning MTP developments.

Regarding the first, politicians can help progress by moving beyond seeing MTPs as iconic engineering artefacts and further recognising them as complex systems that can have significant long term transformational influences (as 'agents of change') on the areas they traverse/impact.

Concerning the second area, any change in mind-set of the kind advocated above needs to be accompanied by strong and sustained political leadership in promoting visions which MTPs in general, and individual MTPs in particular, should seek to fulfil. For example, the HS1 project was politically championed during its period of planning and subsequent delivery.

Finally, regarding the third area, OMEGA Centre research findings suggest that politicians also need to focus more on the advantages/benefits of MTP information gathering, scrutiny and sharing. This requires:

- demanding from government and/or project sponsors periodic reports on the achievement of project visions, goals and objectives, which can be used over time as a basis for corrective action where necessary;
- identifying potential associated parties that would benefit (especially those with 'agent of change' roles), and potentially powerful contextual influences that are likely to critically impact on MTP development processes;
- scrutinising available planning and appraisal information to determine whether it represents a full account of likely short, medium and long-term costs and benefits (financial and non-financial) and whether project plans are capable of fulfilling project aspirations having regard to key stakeholder inputs; and
- ensuring that 'open' and 'closed system' information has been appropriately placed in the public domain so as to better inform transparent decision-making and facilitate future lesson-learning and sharing.

3.2.2 Public Sector Officials

OMEGA Centre case study findings, furthermore, suggest public sector stakeholders/officials can provide significant support to MTP developments by ensuring a full and transparent account of key factors that may potentially contribute to project 'success' are provided to key stakeholder decision-makers. There is benefit to be had from public sector officials being more proactive in the support/guidance they offer to MTP promoters by presenting such projects (where appropriate) as having potentially wide-ranging and uncertain impacts over lengthy time periods - sometimes making them 'bigger gambles' than originally perceived. Benefit can also be gained from officials preparing spatial, sectoral and other plans and programmes (as part of an overall strategy tested by scenarios) to demonstrate how MTPs *might* affect beneficial change over time within these futures. Acting upon such advice in the UK currently, however, would need careful planning on two counts. Firstly, because the institutional memory of many organisations associated with past MTP developments has been disrupted by institutional re-organisations and closures. Secondly, on account of the fact that much of the UK's planning guidance and legislation affecting MTP developments have recently been changed, in some instances quite dramatically in the interest of speeding-up project delivery.

3.2.3 Private Sector Stakeholders

There is much evidence from past OMEGA research to suggest that private sector stakeholders/personnel can become even more significant positive forces for change in MTP development by adopting an increasingly proactive and open attitude towards lesson-sharing. The OMEGA Team contends that sharing lessons and experiences with other MTP decision-makers and stakeholders – drawing, for example, from the relevant knowledge gained elsewhere internationally - can significantly advance the prospects of planning and delivering more successful projects. The case for advocating such knowledge/lesson-sharing with other MTP decision-makers and project stakeholders in the public *and* private sectors, as well as the Third Sector, is especially pertinent where such projects are funded in any significant proportion by the public purse. It is also suggested that private sector parties involved in MTP developments need to give more thought to acknowledging the frailties

associated with solely/primarily adopting a 'closed system' approach to project planning and appraisal. To this end, it is recommended that private sector personnel more closely and extensively assist in the preparation and testing of future scenarios for project development so as to facilitate the preparation and appraisal of more robust MTP proposals. In so doing, this would usefully inform and advise the public sector and politicians of potential contextual influences (and changes thereto) of which the latter may be unaware but which are likely to have a critical impact on decision-making.

3.2.4 Other Key MTP stakeholders

Other key MTP stakeholders can (and should) play a particularly crucial role in MTP development processes by providing critical 'oversight' functions, sharing and disseminating knowledge, promoting debate about MTPs' transformational roles and contributing to sustainable development goals. Such parties are likely to include: community groups, non-governmental agencies (NGOs), academic and 'think-tank' research organisations, international development banks, and sovereign wealth funds (SWFs). The 'oversight' role of this group encompasses many aspects of project planning, appraisal and delivery but can also be focused on scrutinising the relative transparency and efficacy of project plans and programmes. In the UK, examples of such parties include: the National Audit Office (NAO), Green Gauge (the Fast Train Lobby Group), Stop HS2, and Friends of the Earth.

The oversight roles of the above types of organisations are many and varied. They perform a variety of functions such as: the scrutinising of accounts/criteria presented to decision-makers concerning project plans and appraisals; stakeholder engagement and the capability of proposed institutional, policy and legislative frameworks to adequately and sustainably support MTPs. These parties should be called upon to assist in the identification of the extent to which 'real' progress is being made by the public and private sectors in relation to the quality of MTP planning procedures, appraisal methodologies and delivery systems, as a result of lesson-learning and sharing. This could involve a thorough examination of *all* major project outcomes and the identification of lessons that can be drawn from these so that they can be included in the lesson-learning and sharing process to help adjust and resource MTP training and education programmes accordingly. This type of activity is growing in the UK but frequently criticised for taking on lobbying roles and local NIMBY interests *outside* of a broader strategic picture as witnessed in the case of the HS2 project.

The authors suggest that these 'other' stakeholders play a *vital* role in improving MTP development approaches and practices by stimulating debate in the field and acting (where appropriate) as important 'ginger groups' to spur-on MTP planning and delivery agents to 'do better'. Considering the preceding discussion and taking on board the above cited OMEGA Centre lessons for MTP developments, there is much mileage in groups of this kind contributing to strengthen efforts to facilitate debates about:

- what actually constitutes project 'success';
- what the 'agent of change' roles should be for MTPs;
- what are the main boundaries and features of an MTP in terms of 'closed systems' and 'open systems';
- how should planning and delivery agents and other stakeholders react to the 'evolving/organic' nature of MTP decision-making and MTP developments; and,
- what are the roles of MTPs relative to sustainable development visions.

Such parties can also be called upon for the adjustment and appropriate resourcing of education and training programmes to stress the importance of MTPs as having the sorts of multiple functions and impacts identified in the above-mentioned debates. They can be simultaneously used to allocate resources for research and development to better develop capacities to respond to this new understanding of MTPs. In so doing, they can also promote the need for a broader appraisal framework than traditional time, cost and specification criteria, as well as lobby for the removal of organisational, sectorial and professional silos that currently preclude holistic approaches to MTP development processes.

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