

Mega Projects and Governmentality

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Abstract—Mega urban transport projects (MUTPs) are increasingly being used in urban environments to ameliorate the problem of congestion. However, a number of problems with regard to mega projects have been identified. In particular the seemingly institutionalised over estimation of economic benefits and persistent cost over runs, could mean that the wrong projects are selected, and that the projects that are selected cost more than they should. Studies to date have produced a number of solutions to these problems, perhaps most notably, the various methods for the inclusion of the private sector in project provision. However the problems have shown significant intractability in the face of these solutions. This paper provides a detailed examination of some of the problems facing mega projects and then examines Foucault's theory of 'governmentality' as a possible frame of analysis which might shed light on the intractability of the problems that have been identified, through an identification of the art of government in which MUTPs occur.

Keywords—Michel Foucault, Governmentality, Mega projects, Transport.

I. INTRODUCTION

MEGA urban transport projects (MUTPs) are increasingly being used in urban environments to ameliorate the problem of congestion. Although the technology of project management has improved dramatically over the past few decades, MUTPs and mega projects in general continue to experience a number of persistent problems. In particular the seemingly institutionalised over estimation of economic benefits and persistent cost over runs, which could mean that the wrong projects are selected, and that the projects that are selected cost more than they should. Studies to date have produced a number of solutions to these problems, perhaps most notably, the various methods for the inclusion of the private sector in project provision. However the problems have shown significant intractability in the face of these solutions. This paper suggests that the intractability of these problems is not a product of having the wrong solutions. Rather, the ontological context in which the solutions are developed is different to that in which MUTPs occur, and thus

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they do not 'speak' to each other very well. Within the logic, or rationality, of MUTP the solutions do not occur as correct, or appropriate. If they are applied, they seem improperly integrated, like they have been bolted on from the outside.

In this paper, the next section defines mega projects and examines their increasing importance. This is followed by a detailed examination of the problems facing mega projects, the solutions which have been proposed and the problems encountered by these solutions, which have been of concern in the academic literature. Section III examines Foucault's theory of 'governmentality' as a possible frame of analysis which might shed light on the intractability of the problems that have been identified. Section IV seeks to elucidate how the theoretical frame of analysis might interact with the problems of MUTPs to shed light on how the compatibility of MUTPs and the solutions to their problems could be improved.

II. WHAT ARE MEGA PROJECTS

One of the most commonly used definitions of mega projects is as engineering projects that can be described with what Frick calls the six C's [1]. That is mega projects are:

- Colossal in size and scope
- Captivating because of their size, engineering achievements or aesthetic design,
- Costly – and often under costed
- Controversial
- Complex
- Have Control issues

Thus mega projects are not simply large engineering projects. They are important due to their scale and impact not just through their direct effects but because their use of resources, budgets and management time can be colossal. They are an interruption in their location environmentally, socially and politically. When they go wrong they go very wrong. When they go right they become potential great wonders of the world. MUTPs are mega projects built in urban areas in the field of transport. They are not only large in scale, but have a substantive impact on the nature of the transport systems within the cities in which they are built, with the attendant potential to change land use and settlement patterns.

A. Why are Mega Urban Transport Projects Important

MUTPs are becoming increasingly important for a number of reasons across the world. In Australia, MUTPs are supposed to ameliorate the problem of very large numbers of people being able to live in not so close proximity but retain

accessibility and connectedness that keeps cities vital. "Infrastructure provides the material links allowing for the spatially disjointed city to continue functioning as a whole, and thus for the possibility of maintaining physical contacts when required." [2]. In Europe the problem is one of providing these connections to a larger number of people in a much smaller geographical space. In the USA, MUTPs will result from cities need to renew and upgrade their transport infrastructure to take account of growing populations and aging infrastructure [3]. Ekenger [4] points also to the importance of transport links in the project of developing a regional identity in the EU. The interregional differences in the location of resources and demand, increasing mobility of resources and rapid communications associated with globalisation, and increasing populations and faster growing expectations, will continue to push the development of large transport infrastructure that crosses borders and, within urban areas, facilitates trade especially in the developing world [5]. The development and increasing use of public private partnerships is also pushing more projects into the category of mega project due to increased complexity and size.

B. Key Problems with Mega Projects

Although there are many successful mega projects, they are often only identified as such after some time. Flyvbjerg Bruzelius, and Rothengatter's [6] work in identifying the extreme level of cost over runs (in 9 out of 10 projects) points out one of the key problems; underestimated investment costs and disappointing returns. Other areas of concern include low transport performances and negative environmental effects such as landscape erosion, noise, pollution and in some cases total unsustainability, with projects not even being used quite apart from their environmental impact [7].

Another area of concern stems from the impact of these mega projects, and conflict between the economic imperatives which drive these projects, and local people who bear the brunt of the impact. This concern affects both the developed and developing world [8]-[11]. In older literature on these projects (see for example [12]) there is a marked reliance on technological fixes to this problem. In a review of world bank projects, the problem is identified as one of a 'cookie cutter' approach, where an already applied project plan is rolled out over a series of projects without adequate reference to local contexts and of perhaps deeper concern without delivering the promised outcomes [13].

Driven firstly through Lefebvre's philosophical work on the construction and importance of space [14], there has been a shift in understanding that place is far more important in the construction of identity than previously thought ([15], [16]). Thus the cookie cutter approach to mega project delivery is now seen as highly problematic. The destruction of place is a significant problem in terms of maintenance of identity, while identity has been identified as critical to range of sociological outcomes including good health, reduced crime and social participation. Better compensation for the destruction of place or management of mega projects is unlikely to alter the

outcome for individuals of destruction of their place. The suggested remedy is for greater public participation in both problem identification and project specification. However the connection between greater community consultation and amelioration of the problems created through identity destruction following the destruction of place, has not been proven.

Delving deeper into the literature on mega projects, a number of more specific problems and solutions have been identified. The remainder of this section on problems associated with mega projects is broken into three elements: problems with how projects get proposed and selected; problems with the implementation and management of projects; and problems with operation of the projects once they are completed.

C. Problems with Mega Project Proposal and Selection

The first problem with project selection pertains to how projects and problems interact. One could naively imagine that MUTPs occur as a result of a rationally identified need. The literature suggests this is not the case. Projects are solutions in search of a problem [17]. There is a lack of attention to strategic success (whether a project's objectives are consistent with needs and priorities in society and has long term benefits which could reasonably be expected to be produced) and an over focus on tactical success (whether the project was on time and budget) [18]. The tendency for cost benefit analysis to be used exclusively in terms of comparisons of various forms of the same project rather than for the purpose of comparing the costs of not doing anything, or using the money for some completely different project or problem is indicative [19], [20].

Studies using a Foucauldian approach have identified that this lack of strategic rationality is in part due to the nature of project development. Projects are developed in response to problems which are identified in terms which allow for their solution [21]. This can be turned on its head to suggest that projects get to have attached to them problems that need to be solved. They move rapidly from 'something that could be done' to 'something that must be done' in order to solve some particular problem. Once this transformation has occurred, any question of ignoring the problem ceases to be a legitimate political act.

If mega projects are actually the product of a process of coalition building rather than a normative needs analysis [22], then we can conclude that in most cases any reasonable criteria for determining whether a project is actually worth doing – in the sense of whether society wants or needs it is bypassed. MUTP advocates go straight to the question 'can we do this thing?', the question of 'should we do it?' is subsumed by the fact that we can. Until recently it could be argued that this was less of a problem where projects were privately funded and would have minimal impact on the environment, society and economy. But most MUTPs are not entirely private, have wide ranging impacts on the environment, society and economy in which they are located, and in these

days, use up increasingly scarce investment funds not to mention their impact on the resources of government and society while they are being produced.

The most commonly touted solution to produce a normative needs analysis of the need of projects is cost benefit analysis (CBA). CBA is based on calculations of the cost of projects (both fiscally and to the economy more broadly) and their benefits (both direct and indirect). Some analysts question the use of CBA in appraising mega projects on the basis that significant externalities, such as the environment, are ignored and that it does not provide true measures of indirect economic effects [23]. Others question whether any form of CBA could be useful [24]-[26]).

Flyvbjerg, Bruzelius, and Rothengatter [27] in a broad study of mega projects found that cost overruns are endemic and are largely the product of deliberate misinformation provided to government by project proponents. As the main source of information on costs this demonstrates one of the key problems with CBA. The study has elicited a number of studies in response attempting to verify this claim ([28], [29]). Flyvbjerg [30] provides a 'Machiavellian' formula for this cost overrun:

Under-Estimated Costs + Over-Estimated Revenue + Under-Estimated Environmental Impacts + Over-Valued Economic Development Effects = Project Approval

This formula has been explained as a result of socially constructed, human behaviour. It is either the result of competition to win project approval [31], or a product of the conditions of the procurement process, including differences in time horizons for public and private planners, the lack of accountability from transport consultancies that provide advice, and the rigidity of the contract [32].

De Bruijn & Leijten [33] locate the source of cost overruns in the contestation of information on which cost estimates are based. Construction projects are information sensitive but such information is no longer uncontested. Their solution to the problem is application of broader consultation. Flyvbjerg's [34] own solution is to create a situation of comparison between like projects: reference class forecasting. In this method, projects are compared against the average costs for the class of project being undertaken. A database is being developed to facilitate this comparison.

Difficulties in accurately estimating costs and benefits of projects are not solely the providence of human behavioural characteristics. There are also practical difficulties in making accurate predictions over what are long timeframes, in a globalised, complex market where the price of land, concrete, work etc can be unpredictable and outside the control of the project, and the requirements of customers change rapidly [35]. By way of solution, a turn towards a stochastic method (or combined risk/CBA analysis) leading to the generation of a probability distribution for a range of values rather than one value as the solution is recommended [36].

Additionally, work has progressed on the ability of CBA to provide reasonable estimations of indirect benefits and costs [37]-[39]. Studies now suggest that the scale of error likely to

occur from the difficulty in accounting for indirect benefits and costs, is not sufficient to explain the sorts of cost overruns found in empirical studies of mega projects. This would suggest that there is something other than the technical driving the problem of cost underestimation and benefit overestimation. Possibly this is the same factor that makes adequate normative needs analysis and focus on the strategic aims improbable.

D. Project Implementation

The key problem facing project implementation seems to be the nature of contracting and in particular allocation of risk between the private and public sector. The focus of Public Private Partnerships (PPPs) has moved from management of projects for minimal cost, to management of projects for minimal risk [40]. Other problems in project implementation concern the management of public engagement, and the conditions for successful management of complexity, particularly in complex procurement processes.

The technology for management of large complex projects has been developed over a number of years and has clearly improved. On paper the legal and financial instruments (contracts, legislation, and accounting procedures) for MUTPs have been invented and the technology shown to work. Our understanding of the appropriate level of partnership to engage in is developing, enabling much longer term, and larger projects (in financial, temporal and physical terms) than have been common in the past. Improved ability to implement projects and increased capacities in global networking will mean ever larger projects can be envisaged

Government procurement processes have been moving from a least cost version of value for money to a best value framework [41]. Experience of PPPs has shown that the significant financial benefits as traditionally defined do not occur. This has led to benefits being redefined as: greater access to innovation; and better sharing of risk.

Risk sharing in PPPs is designed to deal with human behavioural problems in contracting. The theory is that contracts should be structured so that risk is allocated to the party best able to manage it. A number of authors agree with this idea of risk sharing [42]-[46] on the basis that with transfer of risk to the party best able to manage it, incentives are created both to appropriately manage the risk at the lowest cost, and to gain rewards through such management [47]. There has been a move away from government design and operate – contractor build formats; to government specify – contractor build, finance and manage formats in order to give proper incentives for best value projects [48].

Allocation of construction risk to contractors has led to development of better construction techniques. For example, developments in construction technology such as the use of increased prefabrication of materials, are reducing social and environmental impacts [49]. Continuous improvement, and quality assurance has been developed to reduce costs of re-work to less than 1% of contract if meaningfully employed [50].

There are logical inconsistencies in the argument for risk allocation to the party best able to manage it. The argument is based on the fact that risks are both potentially bad and good, thus the assumption that management of the risk has the potential to provide returns to the party so managing it. Whether this holds true for all risks is open to question. Further the allocation of the risk to the party best able to manage it, in no way ensures that the party will manage it, especially if the payment for taking the risk is made without performance measures being attached [51].

Effective risk allocation for the purposes of managing human behaviour, requires an understanding of the drives of each project proponent. Different companies, government departments etc have different cultures and rationalities or 'arts of government' and therefore will respond to being pushed with regard to the ownership of risk differently [52], [53].

Some authors question the success of risk management strategies, indicating that probably on these big projects, risk management is just not practicable [54]-[56]. Others argue that risk management is not possible, either because proper accountability is lost due to overt political imperatives [57], or because the payoff for good management is too far off to act as a proper incentive [58]. It has been suggested [59] that in PPPs the focus has been too much on the negative of risk, on paying contractors to take on risk while failing to take account for the risks that pay off. Structures that take account of excessive profiteering by companies which take on risk that then pays off are now being developed and are presenting their own problems.

In the areas of political and environmental risks especially, adequate transfer can be difficult to achieve. Classical methods for management of risk include assessing and mitigating, building robust systems, instilling governability, shaping institutions and rules, hedging and diversifying or embracing them [60]. These approaches assume a controllable, stable environment which may not be realistic for mega projects.

A requirement for success of mega project is the generation of public trust, not just for the project at hand, but to reverse the devaluation of government's licence to operate, and thereby enable further projects [61]-[63]. The key method for such success is to ensure that projects remain on time and within budget, and to communicate successes regularly. This of course returns us to the discussion above about the difficulty of creating accurate cost estimates and adequate consultation.

The other key problem for management of projects is the management of the partnerships and coordination of multiple contractors. Mega projects have specific problems due to their size, long time frames, and the involvement of the private and public sector [64]. Partnerships are very difficult to manage, requiring special management skills of coordination, and alignment of different party's objectives [65]. It has been suggested that the public sector lacks the skills to manage these sorts of partnerships effectively [66]. The solution

proposed is to break projects into smaller portions (retuning to an earlier form of procurement) [67], [68], although coordination of these small procurements then becomes the problem [69].

More recently, PPP proponents have moved to improve project manageability by reducing the complexity through removing new and innovative parts of the project. While this improves the manageability of the project it can lead to a devaluing of the project to the point where it can no longer meet strategic objectives [70], [71].

E. Project Operations

The literature on project operations is less extensive. There has been a growing identification amongst practitioners of a series of problems relating to operations, in particular under funding and over estimates of usage especially for public transport initiatives. Allport [72] has provided a review of studies into urban rail projects which indicates an improvement in cost overruns associated with project delivery, but remaining problems with differences between operational estimates and actual income. This of course has major effects on the viability of rail mega projects in the long term. One of the fundamental problems with the implementation of a project to solve a problem, is that the long term operation of that solution is ignored. Here the logic of 'project', is in conflict with the logic of infrastructure or service delivery.

III. ANOTHER CONCEPTUAL APPROACH TO THE STUDY OF MUTPS

The preceding discussion has identified a number of problems for mega projects, cost underestimation, benefit over estimation, selection of the 'wrong' projects, lack of strategic positioning of projects, and the dilemma of gaining community acceptance and approval. The solutions to these problems, greater community consultation, technical improvements to CBA, risk allocation in PPPs have failed to have a statistical impact on the problems. They exhibit a circular relationship between problem identification and proposed solution.

Problems with MUTPs are in part 'real' and are in part socially constructed. For example, contested information is clearly a socially constructed issue [73], while problems with cost benefit, indicate a technical problem in coming to grips with actualised changes in the price of things over long periods of time [74]. Although it is clear that price is a product of social interaction, the argument here is that the project, by virtue of not being in a position to affect the price of materials directly, is at the effect of the price as though it was a real object in the environment. There are a number of other such objects, for example the political party in power, environmental groups etc, as well as more solid matters such as soil or rock profiles on which the project is built. Clearly there is an element of real world effect of MUTPs, they place large physical objects in the environment, and just as clearly the meaning of those objects, their appraisal and their

evaluation are social constructs. This would suggest that the application of a frame of analysis which deals with both the 'real' and the constructed at the same time could provide insight to the problems which present themselves in these projects. Michel Foucault's *theory of governmentality* is one such frame.

Since it was first introduced, a number of geographers and planners have developed and used the theory of governmentality in their work (for example [75]-[77]). Additionally, Foucault's theory of governmentality has been the subject of numerous studies (for example [78]-[81]). For this reason, and because of an ambiguity in the way Foucault himself used it, the term *governmentality* has come to be used in multiple ways and have multiple meanings. For the sake of clarity then in this paper, the theory of governmentality has been separated into three related parts: how the development of a concern with *the art of government* generally, has led to the identification of several specific *arts of government*; that there is a specific *art of government* called *governmentality*, and how *governmentality* has come to be applied to the art of government itself.

So this paper uses the following definitions:

government is 'those ways of reflecting and acting that shape, guide, and manage the conduct of persons – including ourselves' [82], or 'acting to affect the way in which individuals conduct themselves' [83], or it is the conduct of conduct [84]¹;

Mentalities are collective, relatively bounded unities of forms of thought, which cannot be readily examined from within [85];

The Art of government is the development of and understanding of the functioning of political power as an art;

Arts of government are any mentality behind the use of power in the process of governing;

Governmentality is a particular art of government which is the government of individuals through the development of their ability to manage their own conduct [86], [87]; and

Governmentalisation of the art of government is the application of the form of government of individuals through the development of their own ability to manage their own conduct, to the art of government itself

Before discussing the application of the theory of governmentality to MUTPs, their problems and the solutions proposed, it is necessary to explain the basics of the theory.

A. Arts of Government

For Foucault the question of government, authority and the construction of ourselves as individuals are intertwined [88]. Critical to his understanding of the self, is the repudiation of Kant's notion of some transcendental self, but also a transformation of Nietzsche's ideas that the self is separate

from action only in language [89]. Thus in this theory the self is both created in language, and experienced through the application of power (our own and others). Or put another way, what is socially constructed and what is real feed back on each other. This occurs through the interplay of technology, knowledge and rationality.

Foucault developed two notions about arts of government. In his lectures of 1975-6 Foucault explored the notion of the development of understandings of state power as the art of government [90]. Over time the art of government became something which political science, and the Government are concerned with, and led to the identification of many *arts of government*. Thus the art of government as it stands today is actually the application of various arts of government, recognised at various points in history and for various reasons. These arts of government could be categorised as sovereignty, discipline, and governmentality (and their various forms). Each has its own logics of power, and each is developed on top of the one before. None of these arts of government have entirely disappeared. They operate in multiplicity in different institutions and operations of government even today.

In the theory of governmentality, there is a relationship between technology, knowledge, and rationality. For example in the description of the development of the art of government, Foucault observed that the various arts of government are constructed to deal with changing power relations and for ongoing management of the population, and in so doing create the circumstances which are so justified, and the technology for managing them. We can see the relevance here between this and the description of problem identification described in section II C of this paper. When it becomes possible to do a thing, then it becomes rational to do it through the development of new understandings of the thing and what is right behaviour in the world. This is related to Heidegger's insight that a thing only comes to exist as a thing when there is something wrong with it, otherwise we simply experience it [91]. Something shows up as wrong, when we try to apply technology to it. The technology both bounds how the thing occurs and what the solution is to it as a problem. Of course this implies some doing, or that some people do things, without a rationality. They simply start doing it and it is later bounded by a rationality. The latest research in neuroscience indicates that the conscious brain is actually informed of our intended actions after signals have already been sent to various parts of the body. This would support the idea that much of what is done is neither conscious nor rational at least in the way commonly understood [92]. It is critical to undertaking studies of arts of government to understand this relationship, which has been very clearly described by Latour in his book chapter, 'Circulating Reference' [93].

B. Governmentality

Governmentality is the art of government that developed in response to increasing pressure on government to deal with

¹ It is acknowledged that this definition is different from the common usage of the term. Where necessary if reference is made to that institution which is responsible for running a country it will be referred to as The Government. Similarly when using derivatives of government – governing, govern etc it is meant in the sense presented above.

ever growing numbers of individuals². It comes about because of, and works through the construction of individuals as independent beings, capable of governing at least some of their own conduct. Thus governmentality requires the formation of individuals which are capable of managing themselves and others, who can grasp collective mentalities and operate within them [94]. These individuals began to be developed following the development of the disciplines (various processes of training the body and later the mind), and particularly through the process of individuation associated with Bentham's panopticon, as well as through the development of technologies of population control associated with management of the bubonic plague and leprosy [95]. This development of the individual was reinforced (and/or made possible) by the development of the Westphalian system of European states in 1648 [96]. The most widely established and understood form of government through governmentality is liberalism [97],[98].

There have been a number of studies using a governmentality frame of analysis to look at the specific rationality that is liberalism [99]. These studies lend themselves to the impression that there is a historicised progression from sovereignty, through discipline to governmentality [100], or that there is a progression from government, to governance, to governmentality [101]. However this is not the case. In this paper governmentality does not equate to liberalism, and it does not operate as the only art of government even within liberal democracies.

C. *Governmentalisation of the Art of Government*

Arts of government as particularised amalgams of knowledge, technology and rationality, are a description of the way power operates in a particular theatre, discipline or institution. Foucault found these different arts of government in institutions which are as present today as they ever have been. Thus we see articulations of sovereignty in the army, in hospitals, and especially in the treatment of the mentally ill. We see articulations of discipline in youth training centres, prisons (where reform is possible), health clinics pushing weight loss, and schools. MUTPs also manifest their art of government through their existence.

These arts of government form the basis of what we might call institutional culture, where institutional culture is the specified form of an a-priori epistemology, the art of government. Indeed the apparatus of ministerial government could be viewed as a technology for the management and maintenance of these different arts of government. By creating embodied representatives (called Ministers in Australia) of these different cultures which then coordinate activities through executive government (the Cabinet, in Australia), different arts of government can co-exist and generally avoid

overlap. As governmentality has developed the rationality of individuals as governing themselves, that rationality has been pushed into the rationality of ministerial government. Each department is responsible for maintaining its own logic of power, its own government of itself. The problematic of the layering of multiple arts of government within the Government is avoided.

IV. APPLYING GOVERNMENTALITY TO MUTP

To the extent that it can be described as a particular amalgam of technology, knowledge and rationality, MUTP could be a 'new' art of government, or it may be a new reflection of one that has previously been described. Given how art of government functions, understanding the art of government of MUTP could render new insights and provide assistance with a number of the key problems identified above. The following section will attempt to draw out the linkages between the problems and solutions identified and the way that the art of government of MUTP might operate.

The first problem identified above related to project selection. The point was made that the selection of projects is in general not a result of normative needs analysis. The discussion on the development of the art of government showed that in Foucault's understanding of the world, problems and their solutions arise in a dynamic relationship, and that problem definition is determined by the art of government available in which to solve it. In this sense art of government is being used as a particular type of Heideggerian *episteme*: a way of being which determines what we see [102]. This provides an explanation for the observed phenomena that problems come to be defined according to the technical solutions available [103]. As a technology, MUTPs are a particularly constructed solution which provides for the constitution of particular problems and needs that they are the solution of.

There are several pointers to the nature of the art of government of MUTP in the literature already. Boyce [104] notes that at one level mega projects are much more about doing something rather than doing the right thing, and that they have a distinctly pharaonic flavour to them. This pharaonic flavour is described in a similar way to the notion of sovereign power; that which could be described as the mentality of 'I am the king and my will be done'. Certainly the problems associated with displacement of persons in favour of these projects suggest a form of power where the imposition of the will of The Government on the people, or a group of people is justified. The fact that project proponents feel they need The Government investment and regulation to get these projects done indicates more of this type of mentality.

There is clear evidence that at any point in time there are multiple arts of government operate at any one time. If the art of government of MUTP is primarily sovereignty, then this could provide insight into a number of problems for MUTPs. The other art of government strongly in play in advanced

² Foucault subscribes to the theory that prior to the 16th century the number of persons which needed to be dealt with by the state as individuals were very few. Thus this statement is not to say that the number of individuals increased (although population increases would have meant that) but rather the number of persons, and their use as individuals was growing.

liberal democracies is governmentality. Sovereignty and governmentality do not work very well together.

In governmentality, individuals are empowered as managers of their own conduct. This is achieved through proper education, and development of a variety of systems which enforce proper behaviour (disciplines) and punish deviation (sovereignty). At its pinnacle, this logic is reflected in advanced liberalism where the individual is reconditioned to entrepreneurial behaviour through making everything conditional upon that behaviour, life becomes a cost/benefit analysis [105]. Thus in governmentality the logic of power is that power is located in the individual.

Governmentality is a logical threat to the development of MUTPs. It threatens the likelihood of their occurring and blurs their function where they are implemented. This is because, in governmentality, the State is increasingly expected to remove itself from activity, because the 'will of the people' becomes almost impossible to identify. The 'people' are now individuals who have been given the conditions to manage themselves, their individual will is identified through the market and their choices as consumers. In this logic, MUTP would only occur with the agreement of all individuals affected or in response to a truly consumer driven market demand. De Bruijn & Leijten's [106] work on the increase in contestation of information can be reinterpreted as a function not of the vibrancy of democracy but rather from the increasing application of governmentality demonstrating how this logic plays out. Governmentality, increases peoples sense of needing to rely on their own judgement as they are increasingly individuated and increasingly responsible for their actions and beliefs. This leads to a decrease in the ability to "take other's word for it", and therefore to act collectively, which would logically lead to a decrease in the number of mega projects and contestation of them.

Two technologies are leveraged to attempt to gain the required agreement for MUTPs; CBA and public consultation. As yet neither of these technologies is capable of actually delivering this type of agreement. CBA can be seen as an attempt to produce an uncontroversial scientific analysis which will generate agreement amongst individuals, or substantiate a true market demand (which is rarely achieved). CBA is a technology that leverages rational analysis, and therefore 'discipline' as an art of government. Thus it is formed in a different art of government to both sovereignty and governmentality. In CBA data is seen as true, accurate and incontrovertible. In governmentality, data is highly malleable, and therefore subject to distortion in situations of the imposition of power. In sovereignty, data is validated by the power structures that create it.

The solution suggested to this malleability of information and indeed to gaining broad agreement is public consultation. As a technology, public consultation relies on communicative action and generation of shared knowledge through Habermasian type deliberative processes. The problems confronted are similar to those confronting deliberative planning models, the problem being that deliberative planning

leads to platitudes rather than allowing for real collisions and politically unpalatable decisions [107]. In MUTPs the platitudes used to gain agreement in these processes often create significant changes to the scope, scale, and intent of the project itself. This interferes with the inherent logic of MUTP which is to deliver the set product, on time and on budget.

Better understanding of the art of government of MUTPs and the technologies of CBA and consultation, would potentially enable more careful consideration of the application of these technologies. This might lead to more appropriate timing, and use of such technologies. Such understanding may provide further information about whether the overspending on MUTPs is deliberate, or just a lack of consciousness or something else. It may also point to the need to change the way projects are assessed and implemented. Perhaps a solution is to keep the question of whether a project should occur (which could take place in governmentality) separate from its implementation (which could take place in sovereignty). Such a separation might allow consultation based in governmentality to be separated from the distorting influence of the art of government of MUTPs and stop the consultation from distorting the MUTP.

Finally then, in the discussion on governmentalisation of the art of government two points emerge for MUTPs. The first point is that originating arts of government, or logics of power, never really disappear. They merely rearticulate through a continuous adjustment to the influence of other arts of government. This is important to MUTPs because it suggests that MUTP may not be able to renounce sovereignty and conversely that through time, new arts of government, carried in the technologies co-opted by MUTP, might come to infect the initial art of government of MUTP. The discourse of improvement of government's licence to operate [108] can be seen as an attempt to reorientate public consultation to the logic of sovereignty. There is a very clear distinction between the type of consultation these articles advocate and that of public engagement in governmentality.

The second point is that MUTPs often cross institutional boundaries and therefore can find themselves mired in arts of government which the project proponents bring with them and for which their management teams are unprepared. These inherited arts of government may be antithetical to the art of governmentality of MUTP which would provide insight as to why different projects experience greater or lesser levels of problem in coordinating their partnerships.

V. CONCLUSION

It can be seen from the above discussion that MUTPs are a significant concern at this particular time and place, and that they face significant problems. The brief review above demonstrates the potential inherent in the application of the theory of governmentality to MUTPs, the problems they face and the solutions that are currently being implemented. Further research into the nature of the art of government of MUTP is required to further develop these ideas and explore

the potential inherent in the theory.

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