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From the Front End to the Back End – the Importance of Strategic Thinking About the Management of Projects

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Abstract

This essay considers the interest Peter Morris had in the earliest stages of the project's lifecycle. The essay considers why this front end of the project is worthy of both academic and practitioner interest through linking the project's strategic front end to the latter stages of the project, where the project transitions into the required product of the project endeavour. The essay acknowledges the astuteness of Peter Morris's observations and insights and seeks to build on this with considerations and recommendations for both the scholar and the practitioner interested and involved with projects.

Keywords

Strategic front end, strategic management of projects, Peter Morris, transition to operations, project back end.

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INTRODUCTION

In considering and then writing this essay, I sought two objectives. The first is to show my respect, appreciation, and admiration for and of Professor Peter Morris. Peter Morris played a critical role in my career and professional development and, over years of working closely, we became good friends. It was Peter's well noted interest and recognition of the role of 'the front end', coupled to our working relationship, that led to my interest and engagement with this topic. The second objective is, therefore, to attempt to focus some more attention on the 'front end' of projects and how this has important implications for their management. As in other areas of projects and their management that Peter Morris identified early on, the front end of projects is one that is now receiving more attention in the academic literature.

These objectives noted, they sit subservient to the essay's principal aim, which is to demonstrate that the contribution made by Peter Morris in his life and in his work has catalysed others, including me, to seek to progress our understanding of the Management of Projects – a phrase and a school of thinking that Peter Morris created and one that is now increasingly becoming part of modern project management thinking and practice. As a civil engineer who had worked on a variety of projects around the world, Peter Morris had first-hand experience of the reality of how projects progress in ways that aren't always predicted, and which are affected by issues that aren't always anticipated. But it was when Peter Morris put on his scholarly hat, so to speak, that his research was able to formalise the observations and experiences that led him to investigate what one might consider as the 'strategic workings' of projects and how important some of the earliest phases of the project were.

It is in the book *The Anatomy of Major Projects* (Morris and Hough, 1987) that the case was presented that the 'front end' of a project was a critical part of the project's lifecycle. This was a view that Peter Morris maintained throughout his career and emphasised in his later writing, lectures and in discussion. This essay contributes to this view, through a degree of reflection, affirmation, and then extension. The latter contribution is achieved by seeking to connect the earliest front end stages of the project (or indeed program) to the later 'back end' stages of the project, where the project ends and the move or transition into operations becomes a primary focus, i.e., where investment in the project creation transitions or shifts into the asset or service that allows benefit realisation to commence.

As someone with experience as both practitioner and academic of working on challenging and complex projects, Peter Morris encouraged me to explore what actually goes on in the front end, and I started this pursuit in earnest in the latter part of the 2000s. This was around the time of the Global Financial Crisis; a time, one can argue, that heralded the start of a new, turbulent, and challenging era that we are still in well over ten years later. Over this time, we have seen growing interest in, and expectations of, the role of projects in society, the economy, and the many forms of environment that humans have involvement or interest in. In academe, 'project studies' is now an accepted term for the study of projects, their management, and the many varying forms of organisations that are involved in their delivery (Geraldi and Soderlund, 2018). In

other areas of academe, more attention was and is being paid to studying human behaviour (Kahneman, 2011) and how this and other empirical evidence could explain the gaps in existing theory (Cassis and Van Helten, 2021). This provided a fitting backdrop to delve into the front end of projects.

Peter Morris had, by this point, already published significant arguments about the importance of the front end (Morris, 1994; Morris and Hough, 1987; Morris and Pinto, 2004), and these works chimed with my practitioner experiences from working on major and challenging projects, principally the novel, fast-track construction of Chelsea and Westminster Hospital for the UK's NHS in London (Riverside Hospitals, 2013) and then being involved in what may be termed 'full service' projects that used the Private Finance Initiative (PFI) or Public Private Partnerships (PPP). With that as the backdrop, I undertook an enquiry into the front end of projects, resulting in a paper that explored the front end in a variety of project sector settings (Edkins *et al.*, 2013). This added to a growing literature base and widening interest in this area, with evidence of its maturity as a topic demonstrated by the production of a systematic literature review of the subject (Williams *et al.*, 2019a).

Thus, inspired by Peter Morris's original and long-standing interest and recognition of the front end of projects, this essay seeks to continue to pursue and progress consideration of the front end and to do justice to those fellow project management scholars and practitioners who have investigated, examined, explored, and worked in this still rather mysterious and murky part of projects and programs. For that wider audience not as immersed in the front end, the essay hopes to explain why it is so vitally important in terms of the project's likelihood of success and does so by making the links between the front end and the far later and more obvious stages of when the project ends and the benefits from the project start to be delivered. After such consideration, I wish to conclude with a final section that ponders on this area considering the global challenge that we all face, as an illustration of how Peter Morris rightly landed on topics and areas years before many others, aptly demonstrating his ability to be an inspirational thought leader.

WHY IS THE FRONT END SO IMPORTANT?

To commence this consideration on what the front end of project management is and why it is worthy of considering, it is useful to remember the line from Pope's classic eighteenth century poem *An Essay on Criticism* that states: "fools rush in where angels fear to tread" (Pope, 1970). Despite this veiled advice, in the world of projects, there is considerable evidence of cases where the eagerness to 'get on with it' has led to far from satisfactory results. And this is not a problem limited to only one or a few sectors, it is a universal experience and has affected areas as diverse as corporate strategy, political policy, regulation as well as the more classically project-orientated sectors such as IT, construction, aerospace and oil and gas (Anthopoulos *et al.*, 2016; Miller and Lessard, 2001; Morris and Hough, 1987; Pinto and Mantel, 1990).

If fools rush in, then what is it that they are rushing into? To answer this in the context of this essay, we need to define precisely what is meant by the 'front end' of a project. While not yet a fully-agreed term,

the definition of the front end used in this essay is one used in the context of the strategic consideration of a project as this is the perspective that Peter Morris had when he was developing his concept of the 'Management of Projects' (Morris, 1994). This strategic consideration posits the project in its context – indeed a range of contexts, and this provides a very different perspective from those who are focussed on or involved in the project delivery stage of a project. For those engaged with the delivery of projects, the front end is likely to be all those early enabling and preliminary activities that all projects will need. These would include appointing key staff, establishing the principles of leadership and governance, deciding on vitally important issues such as the procurement strategy and implementing management processes and control systems. All these are unquestionably a vital part of the early phases of the project delivery lifecycle, but they will start after the front end of the project, as defined in this essay, has completed. This view is supported by academic authors (Edkins *et al.*, 2013; Samset and Volden, 2016; Williams, 1997) and is increasingly recognised by official governmental agencies such as the UK's Infrastructure and Projects Authority (IPA), as the following quote indicates:

> *"We must invest time in thorough up-front planning to ensure that projects are deliverable and affordable before commitments are given. No amount of good engineering, management, and construction will provide much resilience if a project was the wrong one to begin with and even good project management will not recover the needed value in a poorly selected project."*[2]

To avoid definitional ambiguity, this essay uses the term 'strategic front end' (using SFE on occasion) to distinguish from the many areas of activity and consideration that comprise the 'delivery front end'. The strategic front end of the project is the time of the proto project, i.e., it is the potential project and the project's genesis – where ideas and suggestions are shaped and developed into a proposal or 'pitch' that can then be decided upon (Christenson and Walker, 2004). The strategic front end of the project is one that is instigated by the party or parties that recognise that some change is needed to the status quo. This instigating party can be known variously as the client, the owner, the champion, or the sponsor. Whatever name is used for this party, he, she or they will be requiring a change that will lead to something that is new, distinct and/or different. The obvious driver of such a change is the need to respond to some identified factor of concern. This can be an *urgent need* in the case of projects providing disaster relief or military or emergency service intervention. Other proposed projects can be stimulated through the desire and opportunity that can occur as a result of issues or pressures resulting from developments in areas such

[2] Source:IPA,(2020), https://ipa.blog.gov.uk/2020/09/09/setting-up-for-success-the-importance-of-front-end-loading/ (accessed October 2022)

as economics, politics, societal change, and technology.

Whatever the source of the stimulus to start considering a project, to make a possible or potential project a reality will require the exercise of various forms of power (e.g., political, economic, financial, legal, or regulatory), as well as resources and commitment to be in place and available. Deploying this power, which can take many forms, including the various use of informal and formal lobbying alongside proposal documents, presentations and project 'pitches' (Frydrych *et al.*, 2014), has the objective of convincing those that need to be convinced that the proposed project is viable, sensible and ideal, or necessary. For some projects, there can be years or even decades in this phase, as has been noted in the case of Crossrail – the major London east-west train system that commenced construction in 2009 and opened as the Elizabeth line in mid-2022. This major project took many years to come to fruition, with the earliest idea for what would be Crossrail was first mooted in the nineteenth century, and was then more clearly suggested in 1943 (Crossrail Ltd., No date).

During this SFE stage of the project there is much strategic-level positioning, shaping, clarifying, and aligning. Whilst using the phrase 'getting all the ducks in a row' may not often be seen in scholarly papers, this is an apt way of articulating what happens in this stage. The various forms of political support, the financing, the resource and technology support, and willingness to accept the prospect of the proposed project are all vital and can take a long time to achieve and require multiple iterations to get to the point of clarity and alignment.

The completion of the strategic front end of the project is when the proposed project is given formal approval. This is a milestone moment as it is the clearance or sanction to proceed as an articulated and distinct project, complete with the necessary essentials of committed resources and defined deliverables. In Peter Morris's first book – *The Anatomy of Major Projects* (Morris and Hough, 1987) – eight project cases were considered and all but one (an earlier incarnation of the Channel Tunnel) were sanctioned and delivered, but as one reads the book, there is the clear sense that some projects were being significantly evolved after sanction. It is true that projects often have to evolve, and this can, and often will, lead to change. Whilst relatively minor adjustments to an ongoing project should be and are seen as more the norm than exception, any major, profound or dramatic changes to a project's mission, its scope and fundamental specification is likely to have significant impact on budget, schedule, expectation and perception. To illustrate the currency of this point, the example is cited of the report by the UK's National Audit Office (NAO) into the London terminus of the substantial High Speed 2 railway project. This report, issued in March 2023, notes the challenge presented for the rebuilding of Euston railway station and the 13th of the report's key findings states:

> *"DfT [Department for Transport] and HS2 Ltd will pause new construction work at HS2 Euston for the next two years while they look again at how to achieve an affordable and deliverable design that provides value for money. As a result of this pause there will be additional costs and overall spend could increase." (p.10)*

The same report notes as its first conclusion:

> *"DfT's and HS2 Ltd's attempt to reset the programme since 2020 has not succeeded and further action is now required to develop an affordable and viable station. DfT and HS2 Ltd have been working to reach an affordable solution since 2015, but this highly complex project continues to present significant challenges. While it was necessary to look again at the design and costs of the station in 2020, the budget for Euston station was fixed too early and too low for what was intended to be achieved. DfT and HS2 Ltd have made efforts to reduce costs and improve governance. However, they have not been able to develop an affordable scope that is integrated with other activity at Euston and a further reset is required." (p. 12)*[3]

Whilst Morris and Hough were reviewing projects from 40 or more years ago, we still, today, are battling with the same issues that can lead to frustration and disappointment and we need to learn as our ambitions and expectations for our ever increasingly challenging projects and programs is greater.

MANAGING THE FRONT END IS NOT EASY

Reading across Peter Morris's canon of contributions to the understanding of projects and their management, it is possible to see how he recognised the challenge of managing well the strategic front end. To simplify the logical process that generates projects, it appears to run something along the following broad-brush lines. It is to be noted that in the following, the hypothetical context is the strategic front end considerations for a significant form of project.

The simplified logic is a case of:
> 'we' have a situation or opportunity – *this is the stimulus needed to start the project consideration.*
> 'we' have some ideas as to what could be done – *this is where possible projects are considered.*
> 'we' evaluate what (if anything) to do – *this tests whether the stimulus is sufficient to justify the resource and effort needed to further progress the possible project.*
> 'we' do enough checking/analysis/testing to determine feasibility, viability, and appeal – *this starts to give the proposed project some key metrics of both possible impact/benefit, cost and risk.*
> 'we' seek the sanction (or quite possibly a series of sanctions) to allow the proposed project to proceed – *representation is made to the party/parties holding the necessary power and authority to approve the project, either entirely or to progress to further*

[3] Source: High Speed 2: Euston, Report by the National Audit Office, dated 27 March 2023 (session 2022-23), HC1201, available at: https://www.nao.org.uk/wp-content/uploads/2023/03/high-speed-two-euston.pdf

levels of refinement – that may or may not be given.

The above may appear simple, sequential and rather obvious, but in reality it can often be none of these. As we now know from those who have studied how we think, decide and act (Kahneman, 2011), as humans, we have our biases and our heuristics (Gigerenzer, 2008). Being biased, making assumptions and seeking short-cuts is, quite simply, part of what makes us human. Whether in the public or private sector and whether it is a small or large project, vested interests, unfounded assumptions and poor analysis that result in badly conceived projects litter the project landscape (Royer, 2003). One would expect that as projects become 'mega' in size and objective that there would be the greatest likelihood of highly rational and purely analytical consideration of the strategic front end. However, as Flyvbjerg is well noted for pointing out, these projects can and often do suffer from a variety of issues that lead to great initial expectation and then, much later as the project unfolds, great concern and disappointment (Flyvbjerg, Bruzelius and Rothengatter, 2002; Flyvbjerg, Glenting and Rønnest, 2004).

For the bigger, more complicated and more important projects where the 'we' referred to above can be many parties both within and beyond the instigating organisation, the strategic front end of projects can be protracted, politically charged and expensive in terms of the resources consumed (Edkins *et al.*, 2013). It is the combination of the importance of the SFE to the future outcome of the project, the heterogeneity of the organisational contexts in which the SFE is happening and the risk of wanting to 'rush' to the evident stage of project delivery that has led to this area being worthy of academic investigation. Here, the seminal works of (Miller and Lessard, 2001; Morris and Hough, 1987) revealed how widespread this issue was. Over the years that followed, these authors' findings and conclusions have been backed by the work of other academics (Flyvbjerg, Bruzelius and Rothengatter, 2002; Williams and Samset, 2010; Williams *et al.*, 2019b) as well as resonating with august bodies such as the U.S. DoD (Department of Defense, 2008) and its use of the Planning, Programming, Budgeting and Execution System (PPBES) and NASA (Bilardo *et al.*, 2008) in the US and the variety of 'Value for Money' studies issued by the National Audit Office in the UK. Summarising and synthesising the results leads to the assessment that projects spent too little time being carefully conceived and planned in the earliest upstream phases, leading to many downstream issues, challenges and, ultimately, disappointments.

These various investigations and analyses of both successful and problematic projects revealed – or rather tracked back – to this very early, conceptual phase of the project as being where the problems entered. As these problems are latent, it can take considerable time for them to emerge, and they may appear in areas seemingly unrelated to the original cause. To illustrate how exciting and challenging the SFE is, consider a real, if significantly shortened and simplified, example: a possible project was triggered by a budget provided to enable community and economic betterment. The proposal was made to create a new road traffic bridge to link two communities that were both economically productive, but which were both operating significantly below capacity. This idea of a

new road bridge (the project) then led to much excitement as it triggered various other opportunities that then translated into 'must have' requirements – such as improvements to existing roads and other infrastructure to both enable and benefit from the bridge. After such consideration and when the costs of the bridge and all associated works were estimated, it was found that within existing budget limits there would only be funds sufficient to build the bridge OR to do much of the associated works, but not both. Such a case offers two alternative realities for what happened next: the first is that the proposal was not sanctioned, and no project resulted – potentially until a suitably revised and increased budget was allocated. The second is that the project (i.e., the construction of the bridge) was sanctioned. This sanction was issued knowing, or at least recognising, that the full project scope (bridge and associated improvements) could not be afforded, but with the expectation that further funding may be found. This can be considered as a manifestation of the concept of escalating commitment (Whyte, 1986).

The reality is that in sanctioning a project, an obligation is created for others, often into the future. As this future unfolds, so it may reveal that the project was founded on sets of presumptions or only partially considered evidence, thus raising the spectre of accusations of 'strategic misrepresentation' (Flyvbjerg, 2008). In many cases, the optimism bias shown in the strategic front end (Treasury, 21 April 2013) will require downstream project delivery adjustment response, such as the use of phasing or value engineering, to improve the ratio of benefit to cost, typically through focussing on reducing the cost (Cooper and Slagmulder, 1997). An alternative strategy, albeit a riskier one, is to hope or indeed gamble that as time progresses some other solution materialises, such as anticipating the involvement or deployment of a new or nascent technology.

To resolve this risk of sub-optimal projects being added to any portfolio, Peter Morris advocated the strategic importance of having project management represented at the strategy and project shaping table. This 'C-suite' project presence: the 'Chief Projects Officer' would be able to evaluate the project in the dual contexts of the organisation's existing portfolio and within the prevailing and expected wider environment. Such a senior person would have talents that enabled them to segue from the strategic vision and intent to the operational delivery reality. They would be able to draw in and upon expertise in a variety of necessary inputs, such as finance, technology, key internal and external stakeholder interests and never forgetting those able to represent the people to be involved in the delivery of the project – both in capacity and capability terms. On this latter point, Peter Morris was clear that it was vital to ensure the timely involvement of the necessarily talented and experienced people needed to deliver projects. Despite this repeated clear flagging of the issue of getting the correct people in the current position at the correct time, and, whether it be in the availability and talent of those in front line of project management or that found within the supply chain, we still find projects that either start out or get into trouble as they can't secure the quality of talent in the capacity they need at the appropriate time.

The challenges presented within this earliest stage of the project lifecycle are not

limited to just the client or demand side. Failure to manage the SFE better leads to issues on the supply side as ignorance of the possible project by critical members of the potential supply chain will lead to the lost opportunity to help shape and steer the project towards success and away from avoidable major problems. This then leads to realisation that the earlier projects are considered across both the client-side and the deliverer-side, the higher the chance of alignment and overall success. In some sectors such as aerospace and oil and gas, there are high levels of early stage interaction between the client and the key players in the supply chain, with much work focussed on the FEED stage – Front End Engineering Design (Merrow, 2011). Here, a path is navigated that builds trust without undue risk of exploitation or unfairness. Yet in other sectors, such as construction, it is still too often the case that the supply-side is either excluded or not well organised to join in the SFE conversations. In the case of project work procured by publicly accountable bodies, this may be for fear of corrupt practice, and for older sectors like construction, it also may be a trait of a sector that has, for a long time, been organised and orientated to be responsive or reactionary. For whatever reason and in whatever context, there are clear arguments for why earlier engagement with those who will be delivering the project can be extremely beneficial – as evidenced by those in the construction sector who advocate 'early contractor involvement' (Mosey, 2009).

CONNECTING THE FRONT END: LIFECYCLE CONSIDERATIONS AND TRANSITIONS

For some years you may have come across messages – on car bumpers or in their rear windows – that say something like 'A dog is for life – not just for Christmas'. Following the dramatic changes to many people's work patterns because of Covid-19, an updated version of this might swap Christmas for pandemic, such was the uptick in dog ownership as many who would normally work in an office or similar, found themselves at home during periods of limited and restricted movement. As the pandemic eased, so these dogs (and cats) were no longer wanted – leading to a surge in occupancy for pet rescue centres (Wollaston, 2021). This oblique reference to the strategic front end expressly implies the need to consider, up front, the longer-term implications. In project or asset speak this is covered by the increasingly technical considerations of lifecycle costing. As Peter Morris was a strategic thinker, it should come as no surprise that he recognised this need for through life consideration as part of the front end as it is quite simply essential to consider what unleashing a project or program will result in – not only the benefits, but also the obligations it will confer.

The obligation conveyed by a project can be long-term – extremely long-term in some cases, such as the storage of nuclear waste, where managing the project transforms to managing the asset/entity/artefact. Or such obligations can be short term. In the UK, the positive case for the use of the Private Finance Initiative (PFI) in the provision of public service buildings such as schools and hospitals was, in part, to directly deal with the problem of backlog maintenance that was well known to exist in these types of building constructed using the traditional decoupled approach. This is where capital expenditure – to build the hospital (for example) and operational expenditure – to

maintain the hospital – are separated and the latter subject to budgetary alteration and often reduction. This combination then leads to many challenges and issues, with assets degrading to the detriment of the users and with potentially unaffordable costs mounting.

Recognising that the 'in-use' phase of project deliverables can be both long in duration and expensive in resource consumption, it is not surprising that lifecycle costing has been recognised as important for project appraisal (Woodward, 1997). Until the relatively recent advocacy of 'Totex' – short for total expenditure (Panasuik, 2020) – the assessment of proposed projects can still have a preponderance of focus on the initial capital costs of delivering the project as a form of 'asset'. This risks a failure to duly regard the operational and end-of-life costs that such asset creation will confer. Traditionally, this lifecycle assessment would be the cost in money terms, but the unfolding climate emergency is rapidly changing this, with an increasing interest and concern about the embodied and whole of life cost of 'carbon' or greenhouse gas emissions. These two separate yet linked issues – those of the shift to whole of life assessment and the consideration of the cost of a project in terms of both money and carbon – make the role of the strategic front end even more important as it is during this formative and shaping phase of the proto project that major future opportunities or problems will be embedded. The important point of principle for those considering or involved in the SFE is to recognise the precious opportunity this phase of the project represents. Before any commitments are made to 'lock-in' to a specific project, it is vitally important that the expected benefits that will be delivered from the project's delivery are carefully considered and appreciated. It is also necessary to consider the full set of costs that will have to be met in capital and operational terms, and not just in cash but now also in carbon. This fuller, richer, and more expensive to acquire appreciation then migrates into a broader consideration of the way the project will impact on the various associated environments, economic systems, communities, and ecosystems. This is bidirectional and so there is need to also consider the corollary - i.e. the impacts from these sources that could affect the project and its expected benefits.

Segueing between project creation/delivery state and that of operations is the transition between the construction phase and the operation phase. Where this is handled well, as was the case of the London 2012 Olympic and Paralympic Games, this transition is smooth as is noted in the official report of the London 2012 Games:

> *"Operational readiness planning across the entire Games footprint was critical to Games preparations and was the subject of much pre-Games planning, starting with desktop and event simulation exercises, initially related to test events. This was essential to establishing a strong culture of readiness within LOCOG[4] and its stakeholders and delivery partners, helping Games teams to become better equipped to cope with the*

[4] Local Organising Committee of Olympic Games

> *highly complex and challenging Games-time environment."*[5]

When things don't transition well, as was the case with the baggage handling system on the opening day of the UK's Heathrow Airport's Terminal Five, the project's reputation suffers – along with those with whom the project is associated (Brady and Davies, 2010). Such cases offer powerful opportunities for other projects and programs to learn and develop strategies, processes and systems that can enhance the smooth transition and mitigate the risks of major failure.

In recognising this positing of the project in a wider contextual environment, Peter Morris was again at the forefront. His PhD thesis featured careful consideration of the role of systems and systems thinking, drawing on both General Systems Theory (Von Bertalanffy, 1993) and cybernetics (Wiener, 2019). This wider and deeper thinking about the background context and environment that the project is originating from elevated the consideration of the project, recognizing the positioning of the project in both temporal and multi-environmental terms. Such wider and deeper thinking is not meant to imply that those who manage projects must become polymathic soothsayers, but for those who manage the strategic front end of projects, it should be incumbent to consider how the project is likely to sit in possible futures and what the project's consequences may be. This view reinforces Peter Morris's argument about C-Suite representation for projects and programs and the point is reinforced to project practitioners through reports such as 'Project 5.0' (McKinsey & Company, 2021) and that of PWC (PWC, 2014).

MANAGING THE CONCLUSION OF THE STRATEGIC FRONT END

The clear need for proposed projects to be presented for consideration and sanction sets up a tensioned discussion between the project advocators and those who will have to agree the resource implications. The consideration of the proposed project is therefore an important part of the sanctioning process. In countries such as the UK, that have considerable experience of undertaking public sector projects, highly sophisticated procedural systems are now in place to rigorously and comprehensively evaluate proposed projects. In the UK and for central government-initiated projects this procedure is currently referred to as the 'Five Cases Model' and is set within the UK government's 'Green Book'[6]. In countries that have a federal system such as the United States or Australia, there will be more variation in approach, but there will be similar principles – of seeking to ensure that detailed consideration of a proposed project has been conducted – as illustrated by guidance issued by the Australian

[5] Source: London 2012 Local Organising Committee, (2013) Official Report, Volume 3, p.39 available at: https://stillmed.olympic.org/Documents/Reports/Official%20Past%20Games%20Reports/Summer/2012/ENG/2012-RO-S-London_V3_eng.pdf (accessed July 2022)

[6] See: https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent/the-green-book-2020#the-overarching-policy-framework (accessed August 2021)

government's finance department[7]. As resources are scarce for both the public and private sector, private sector organisations will similarly have to consider, evaluate and then select the projects that are most likely to achieve the organisation's aims – both initially and in the longer term. But unlike the public sector, where external scrutiny is likely in the form of official audit bodies, the private sector can conduct its evaluation of proposed projects without such independent official oversight and reporting. However, this appears to be changing in some of the larger publicly traded corporations, as more activist shareholders are seeking to question and indeed challenge corporate executive decision making (Hill, 2017).

In some sectors, most notably the industrialised project sectors such as oil and gas production, process engineering, property development and pharmaceuticals, there has been for a long time a structured and formal approach to the way that prospective or candidate projects are presented, evaluated and progressed. In these sectors, there is widespread use of 'Front End Loading' to recognize and make rigorous the early development of the project. The formalised treatment of this earliest stage of the project ties in the strategic and the delivery front end and also directly connects with those considerations that are captured under portfolio management (Wiener, 2019). And a more structured approach has developed further in some sectors such as the oil and gas industry with the previously noted FEED (Merrow, 2011) being well established and the development of 'pre-FEED'[8], where the fundamental issues associated with the engineering and design challenge can be considered and evaluated in order to assess the viability of the proposed project. Peter Morris drew attention to this area and how significant it was, and how the work of Ed Merrow and the company he founded has been in the vanguard of analysing, evaluating and commentating on how the front of these types of project is managed. Indeed, Merrow can be seen as working with those who are seeking to actively and effectively manage the interface between the strategic front end and the delivery front end – this being far easier to achieve in the private sector than the public sector, where accountability for fairness and transparency makes the front end management of projects far more fragmented and dislocated.

For many projects, obtaining the go/no-go decision about a project will not be as simple as a single 'yes' or 'no'. Rather, as the project gets more complicated, complex, major or strategically important, so it is likely to have to pass through many levels and stages of sanction via stage gates that can be both formal and informal (Edkins *et al.*, 2013). Whilst this is sensible, there are inevitable challenges with this approach as the problem of sunk cost and escalating commitment can lead to momentum building, at which time the proto project becomes unstoppable. The result can be projects 'bulldozing' or 'railroading' their way to being sanctioned despite concerns about the validity of the project's case. Evidence of this effect can be found especially in those projects that

[7] https://www.finance.gov.au/government/commonwealth-investment-framework/commonwealth-investments-toolkit/developing-business-case (accessed August 2021)

[8] https://www.fluor.com/services/engineering/front-end-engineering-design (accessed August 2021)

have substantial political capital invested in them or when much has been made of the anticipated benefits or profit. Such motivation can lead to great pressure being applied by those proposing the proto project and seeking its sanction. As projects and programs scale in size, ambition and novelty, so this issue can become particularly acute. As our capacity to comprehend ever bigger and ever grander projects and programs has grown, so has interest in the rise of 'megaprojects' (Denicol, Davies and Krystallis, 2020). These largest of projects carry with them significant kudos for those seeking to be recognised as the principal advocate and as was seen through the rapid development and deployment of the vaccines to combat Covid-19, global and mega-scale collaborative projects can be undertaken with success. This success is an achievement we may well need to replicate if we are to implement the many projects and programs that are being increasingly considered to avoid the worst ravages of the climate emergency.

This trajectory takes us to the cadre of those novel and challenging projects found in the research and development (R&D) projects that are conducted in all sectors of our economies: government and academe, industry and third sector organisations. As R&D projects are pushing beyond the known boundaries of knowledge, ability and technology, they face the real risk of failure. It is therefore not surprising that when proposed as projects requiring specific allocation of, possibly substantial, resources, they receive significant levels of peer and external scrutiny and challenge before receiving the sanction to proceed. For such projects, where they may fail to deliver against all the proposed ambition, it is important that learning is actively encouraged as the project progresses. Hence these projects will have requirements for presenting interim results alongside progress and these will often be subject to external peer review. These opportunities for learning – treating projects as forms of experiment – allow us to learn and develop strategies and actions to mitigate against the risk of future project failure. These are all facets of the management of projects that Peter Morris championed, as he noted in his last book, *Reconstructing Project Management* (Morris, 2013).

AND TO THE "SO WHAT?" QUESTION

Those who worked or collaborated with Peter Morris soon learned of his habit of interjecting and making you stop and think – hard. As a colleague, I can vouch personally for the importance he set for this so-simply stated term he would pose of you: "so what?" and I am not alone. There is a wonderful irony that Jeff Pinto's (2022) essay on the 40th anniversary of the *International Journal of Project Management* cited Peter particularly for his constant use of the "so what" challenge in advancing knowledge. The lesson learned from such interaction with Peter is that whilst much may be interesting, to have real value there must be usefulness as well. It is therefore beholden on me to answer this simple yet potent challenge for this essay. To do so, I will make three clear points. The first two endorse views Peter Morris held both from his own research and the research of Miller and Lessard (Miller and Lessard, 2001).

- The first point is that for those in key leadership positions, understanding the role of the

strategic front end of projects is vital for project success.

- The second observation is that to successfully manage the strategic front end requires people with a diversity of skills. Managing the front end needs these talented people to employ many approaches and can require both patience and tolerance.
- The third point is to advocate an advancement on the work that Peter Morris started; we must seek to connect far better the strategic front end of projects and the management challenge in this phase of the pre and proto project presents with more than just project delivery efficiency and effectiveness. We need to consider what the delivery of the project will result in. This third point warrants some more unpacking.

There is enough clear evidence from both academic authors and official authorities to make it unquestionably true that rushing the front end of a project will create a greater likelihood of project failure or suboptimal performance. But now knowing this, we have to look at the time well beyond the project creation and delivery stage. The business case for the project will look to consider this, as it is the time of 'payback' and benefit realization. But there is more to be done in this space, especially when the situational context and wider environmental conditions may be changing rapidly and less predictably. Put simply, as part of the early consideration of the project, we need to carefully consider the ramifications and consequences of the project in active operation. The climate emergency provides the most sobering of contexts for this consideration and Peter Morris's last substantive contribution to the field of managing projects was his concerns for climate change (Morris, 2017).

Mounting data now clearly alerts us that we are now in the era of the Anthropocene, where humanity's role on this planet has and is making a difference unprecedented in Earth's long history. Evidence presented by the International Panel on Climate Change is compelling[9] . The climate emergency is with us and is set to get worse unless dramatic action is taken – and quickly. Projects that collectively created the industrial revolution have left us with a legacy that now requires large-scale and radical change. Much of the action needed to be taken both for mitigation and adaptation will come in the form of projects. We will need projects that will make us resilient to the changes we will inevitably face. We will need projects that will allow us to transition to a way of living that seeks to reduce the severity of the climate emergency. We will need projects that allow us to live compatibly with the rest of the Earth's natural system. And we have precious little time. These requirements and pressures mean that it is imperative that we understand how to lead and manage the front end of those many possible projects that are going to be proposed. We need to ensure that we identify those projects that we have high confidence in that can make substantive contributions to reducing the climate emergency and/or assisting us to cope with the ramifications of the climate change that is already locked into our future. The

[9] See the latest (as of time of publication) three reports produced by the IPCC as part of the AR6 Synthesis Report: Climate Change 2022: https://www.ipcc.ch/reports/

projects and programs we select to embark on need to have the best opportunity to succeed through excellence of front end consideration and planning.

Even more importantly, we must recognise that we will get some things wrong. We must do all we can to not make bad decisions, but we are fallible, and we need to accept our limitations. Investing in the strategic front end is a clear way of increasing the chances of both good projects being selected and for those good projects to be delivered well. Where we get things wrong, we must learn to fail very quickly and then recover and revise. These are easy words to type and read, but the actions they allude to are far from easy, especially as we are having to make decisions and take actions in the near term that may have consequences for decades, centuries or even millennia. It is in this context that our ability to manage the front end consideration of projects is quite simply vital, as we have limited time and resources and we cannot afford to select too many of the wrong projects for the wrong reasons only to then observe them fail to complete, transition and deliver. These are points that Peter Morris has made and which I simply wish to echo, reinforce and share.

As noted earlier, according to the definition used here, project delivery commences after the strategic front end has completed and sanction is granted. Thus, it can be inferred that the purpose of the strategic front end is to enable this sanction to be granted. But the role of the SFE shouldn't be simply to achieve this fundamental milestone, nor to focus solely on maximising the project's chances of being delivered successfully. What has become clear from recent research is how vital the front end can be to post-project-delivery ability to deliver the benefits expected of the project at the outset and to 'bake' these into the project's scope (Zerjav, Edkins and Davies, 2018; Zerjav *et al.*, 2018). Whilst none of us have soothsaying abilities, we are capable of considering the future and we should be able to consider how any project will or may contribute to these possible futures. This is coming into sharp relief as we stare into a future that looks almost certainly to be strongly influenced by the profound changes that are under way in our climate.

There are many reasons why we still have some way to go before projects are well managed at the strategic front end and where this then leads to the project being delivered successfully and ultimately being judged as successful. Of these, an interesting one to consider is the 'clock speed' of many of the most powerful decision makers. Whether in charge of national politics or private sector business, those with the sanction-granting power often want to see things move – and move quickly. Politicians seek 'shovel ready' or 'oven ready' projects and it can become too tempting to propose feasible sounding prospective projects that prove, latterly, to be practically infeasible or overly challenging.

This recognition of the need for careful consideration brings in the adage 'the devil is in the detail', and those having to evaluate proposed projects will need to operate with an acceptance of a lack of perfect knowledge about how the future will unfold. As noted, projects go from having initially limited or *scant* information to only full information when they complete (Winch, 2004). Given this dilemma, it is obviously still necessary to

evaluate the project in prospect to the best of the ability of those with the power to grant sanction. Hence, we have seen developments to aid better decision-making, such as the five cases model as used in the UK by HM Treasury (HM Treasury, 2018) and also the development of new technologies such as computer modelling and simulation. To illustrate the potential for the use of computer-based modelling technology, consider the examples of the use of either specific commercial software in sectors such as oil and gas, such as Nomitech[10], or more wide-ranging developments affecting the construction sector with the maturing and deployment of Building Information Modelling (BIM) (Bryde, Broquetas and Volm, 2013). These developments illustrate how it is becoming ever quicker, cheaper to evaluate both the proposed project and the project outcome. As computing power – increasingly in the form of Artifical Intelligence (AI) is expected to grow rapidly, there is the real possibility that it will become routine to see these various initial ideas being loaded into scenario-generating software. This will enable the evaluation of how the proposed project performs under a range of relevant contexts, whether these be political, economic, climatic, behavioural or similar. In some other sectors this is now becoming routine, for example, as a consequence of the Global Financial Crisis and the more recent energy crisis, it is now standard practice for regulators of areas such as banking and energy supply to 'stress test' corporate balance sheets or utility supplies against foreseeable scenarios. Future developments in digital technologies holds the prospect of such operational scenario testing becoming part of the early evaluation of projects, with the result that the strategic front end becomes both smarter and more dynamic.

IN CONCLUSION

This essay has sought to both recognise and develop the vital work of Professor Peter Morris. Its chosen topic is the front end of projects as this is an area Peter Morris was well known to be very interested in, about which he was deeply concerned, and which he encouraged to me to explore and appreciate. To achieve the aim and objectives set out, this essay has sought to explain why the front end – and more specifically the strategic front end – is proposed as such a vitally important phase of the project. A consideration of this topic is highly pertinent for the challenging times we are living in. One can make a strong argument that it has never been more pressing to get the selection and shaping of our future projects right. The essay has only been made possible to consider and write as a result of the body of work produced by, and my long association and friendship with, Professor Emeritus Peter W.G. Morris.

The essay has resolutely affirmed contention made by Peter Morris, and others, of the importance of investment in the time, money, and intellectual energy in the front end of projects. Moreover, the essay has connected the strategic front end of projects to other phases of the project lifecycle, importantly including the transitionary and post-project phase, where benefits are to be delivered and impacts made. Like much in project management,

[10] See: https://www.nomitech.com/oil-gas

success is not assured, but success can be managed, and it is this active consideration of the opportunities that active management can provide when deployed into the front end that makes this stage so important and rich in issues for the scholar, the practitioner and the policymaker.

And a final note, one that is somewhat personal. Peter Morris was able to both identify issues and make cogent arguments that quite simply improved both our understanding and ability to manage better projects and to manage these better projects in a better way. Peter deserved the many accolades that he accumulated through his life and posthumously. Peter had been there, he had done it and he was recognized and appreciated by the many, whether in business, academe, government or professional institutions. Throughout his life, Peter worked with, drew from, and helped many students, scholars, and practitioners of project management. His talent is evident from the legacy of his books and papers, and the awards and honours that he received. All this was achieved in Peter's own way, which was to be generous, supportive, and kind, but he also had a knowing and challenging gaze that was driven by his eagerness to try to make a real difference. And, as noted here and elsewhere, a frequent and poignant use of that fearful 'and so what?'.

Peter is sorely missed by many, but his work is still there for us to draw and build upon. I can only hope that this essay, dwelling as it does on an aspect of the management of projects that Peter was deeply engaged with, may contribute to making a positive difference, registers the impact he has made, and I hope that this would meet with his approval.

REFERENCES

Anthopoulos, L., Reddick, C. G., Giannakidou, I. and Mavridis, N. (2016). 'Why e-government projects fail? An analysis of the Healthcare.gov website'. *Government Information Quarterly*, 33 (1), 161-173.

Bilardo, V. J., Korte, J. J., Dankhoff, W., Langan, K., Branscome, D. R., Fragola, J. R., Dugal, D. J., Gormley, T. J., Hammond, W. E. and Hollopeter, J. J. (2008). *Seven Key Principles of Program and Project Success: A Best Practices Survey*. Paper presented at the NASA APPEL Project Management Challenge Conference.

Brady, T. and Davies, A. (2010). 'From hero to hubris - Reconsidering the project management of Heathrow's Terminal 5'. *International Journal of Project Management*, 28 (2), 151-157.

Bryde, D., Broquetas, M. and Volm, J. M. (2013). 'The project benefits of building information modelling (BIM)'. *International Journal of Project Management*, 31 (7), 971-980.

Cassis, Y. and Van Helten, J.-J. (2021). *The Legacy of the Global Financial Crisis*. London: Bloomsbury Publishing.

Christenson, D. and Walker, D. H. T. (2004). 'Understanding the Role of "Vision" in Project Success'. *Project Management Journal*, 35 (3), 39-52.

Cooper, R. and Slagmulder, R. (1997). *Target Costing and Value Engineering*. New York: Productivity Press.

Crossrail Ltd. (No date). *Crossrail - from its earliest beginnings*. [Online]. Available at: https://www.pmi.org/-/media/pmi/documents/public/pdf/kas/112112_a-systematic-literature-review_r4_final.pdf. [Last accessed April].

Denicol, J., Davies, A. and Krystallis, I. (2020). 'What are the causes and cures of poor megaproject performance? A systematic literature review and research agenda'. *Project Management Journal*, 51 (3), 328-345.

Department of Defense. (2008). 2008 Strategic Management Plan (SMP). In D. o. Defense (ed). United States: DoD.

Edkins, A., Geraldi, G., Morris, P. and Smith, A. (2013). 'Exploring the front-end of project management'. *Engineering Project Organization Journal*, 3 (2), 71-85.

Flyvbjerg, B. (2008). 'Curbing Optimism Bias and Strategic Misrepresentation in Planning: Reference Class Forecasting in Practice'. *European Planning Studies*, 16 (1), 3-21.

Flyvbjerg, B., Bruzelius, N. and Rothengatter, W. (2002). *Megaprojects and risk : an anatomy of ambition*. Cambridge: Cambridge University Press.

Flyvbjerg, B., Glenting, C. and Rønnest, A. K. (2004). 'Procedures for dealing with optimism bias in transport planning'.

Frydrych, D., Bock, A. J., Kinder, T. and Koeck, B. (2014). 'Exploring entrepreneurial legitimacy in reward-based crowdfunding'. *Venture Capital*, 16 (3), 247-269.

Geraldi, J. and Soderlund, J. (2018). 'Project studies: What it is, where it is going'. *International Journal of Project Management*, 36 (1), 55-70.

Gigerenzer, G. (2008). 'Why heuristics work'. *Perspectives on Psychological Science*, 3 (1), 20-29.

Hill, J. G. (2017). 'Good Activist/Bad Activist: The Rise of International Stewardship Codes'. *Seattle University Law Review*, 41 (2), 497.

HM Treasury. (2018). *Guide to Developing the Project Business Case*. London, UK: H.M. Treasury. Available [Online] at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/749086/Project_Business_Case_2018.pdf . [Last accessed August 2021].

Kahneman, D. (2011). *Thinking, fast and slow*. London: Allen Lane.

McKinsey & Company (2021). *Capital Projects 5.0: Reimagining capital-project delivery*.

Merrow, E. W. (2011). *Industrial Megaprojects: concepts, strategies, and practices for success*. Hoboken, N.J.: Wiley.

Miller, R. and Lessard, D. R. (2001). *The Strategic Management of Large Engineering Projects: shaping institutions, risks, and governance*. Cambridge, Mass.: MIT Press.

Morris, P. W. G. (1994). *The Management of Projects*. London: Thomas Telford.

Morris, P. W. G. (2013). *Reconstructing project management*. Chichester, West Sussex, UK: John Wiley & Sons Ltd.

Morris, P. W. G. (2017). *Climate Change and What the Project Profession Should Be Doing About It: A UK Perspective*. Princes Risborough: Association for Project Management.

Morris, P. W. G. and Hough, G. H. (1987). *The Anatomy of Major Projects: a study of the reality of project management*. Chichester: Wiley.

Morris, P. W. G. and Pinto, J. K. (2004). *The Wiley Guide to Managing Projects*. Hoboken, N.J. ; [Great Britain]: Wiley. Available [Online] at: Publisher description http://www.loc.gov/catdir/description/wiley041/2003026695.html. Available [Online] at: Table of contents http://www.loc.gov/catdir/toc/ecip0412/2003026695.html.

Mosey, D. (2009). *Early contractor involvement in building procurement: contracts, partnering and project management*: John Wiley & Sons.

Panasuik, E. (2020). CAPEX or OPEX? How about TOTEX? Time for a fundamental rethink. In S. Electric (ed), *Schneider Electric Blog* (Vol. 2022). USA: Schneider Electric.

Pinto, J. K. and Mantel, S. J. (1990). 'The Causes of Project Failure'. *IEEE Transactions on Engineering Management,* 37 (4), 269-276.

Pope, A. (1970). *An essay on criticism, 1711*. Menston: Scolar Press.

PWC (2014). *When will you think differently about programme delivery?* London.

Riverside Hospitals. (2013). Changing Times - Riverside's Chelsea and Westminster Hospital. In R. H. a. N. W. T. R. H. Authority (ed) (pp. 26:37). UK.

Royer, I. (2003). 'Why bad projects are so hard to kill'. *Harvard Business Review,* February 2003.

Samset, K. and Volden, G. H. (2016). 'Front-end definition of projects: Ten paradoxes and some reflections regarding project management and project governance'. *International Journal of Project Management,* 34 (2), 297-313.

Treasury, H. (21 April 2013). Supplemental Green Book Guidance: Optimism Bias. In H. Treasury (ed). London: HMSO.

Von Bertalanffy, L. (1993). 'General system theory'. *George Braziller. Traduction française: Théorie générale des systèmes, Dunod*.

Whyte, G. (1986). 'Escalating Commitment to a Course of Action: A Reinterpretation'. *The Academy of Management review,* 11 (2), 311-321.

Wiener, N. (2019). *Cybernetics or Control and Communication in the Animal and the Machine*: MIT press.

Williams, T. (1997). *Managing and modelling complex projects*. Chichester: Wiley.

Williams, T. and Samset, K. (2010). 'Issues in front-end decision making on projects'. *Project Management Journal,* 41 (2), 38-49.

Williams, T., Vo, H., Edkins, A. and Samset, K. (2019a). *Systematic Literature Review: The Front End of Projects*. Newton Square, PA, USA: Project Management Institute.

Williams, T., Vo, H., Samset, K. and Edkins, A. (2019b). 'The front-end of projects: a systematic literature review and structuring'. *Production Planning & Control,* 30 (14), 1137-1169.

Winch, G. (2004). Rethinking project management: project organizations as information processing systems?, *PMI 3rd Research Conference: Innovations*. London: Project Management Institute.

Wollaston, S. (1st December 2021, 2021). 'Rescue me: why Britain's beautiful lockdown pets are being abandoned'. *The Guardian* Available [Online] at: https://www.theguardian.com/lifeandstyle/2021/dec/01/rescue-me-why-britains-beautiful-lockdown-pets-are-being-abandoned.

Woodward, D. G. (1997). 'Life cycle costing—Theory, information acquisition and application'. *International journal of project management,* 15 (6), 335-344.

Zerjav, V., Edkins, A. and Davies, A. (2018). 'Project capabilities for operational outcomes in inter-organisational settings: The case of London Heathrow Terminal 2'. *International Journal of Project Management,* 36 (3), 444-459.

Zerjav, V., Edkins, A., Lewis, M. and Spencer, F. (2018). The Hinterlands of Project Management? Project Bookends and the (Neglected) Role of Boundary Organising, *Engineering Project Organization Conference*. Brijuni, Croatia: Engineerring Project Organization Society.