Do we get what we want from major public projects?

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Front-end definition of projects: Ten paradoxes and some reflections regarding project management and project governance

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Abstract

The importance of the front-end decision-making phase in securing projects long-term success is being increasingly recognized. This area is underrepresented in the literature, but there are several key themes that run throughout, identifying key issues or difficulties during this stage. Clearly, a key to successful projects lies in the choice of concept. This paper presents some findings from the work of the Concept research programme on front-end management and governance of major public investment projects in Norway. It is based on studies that explore strengths and weaknesses in the processes of analysis and decision-making during the early phase before the final choice of conceptual solution is made, and the extent to which projects under study are (or are likely to be) relevant and effective in relation to needs and priorities in society. It concludes that there are frequent deficiencies in these processes, and that the potential for improvements is huge.
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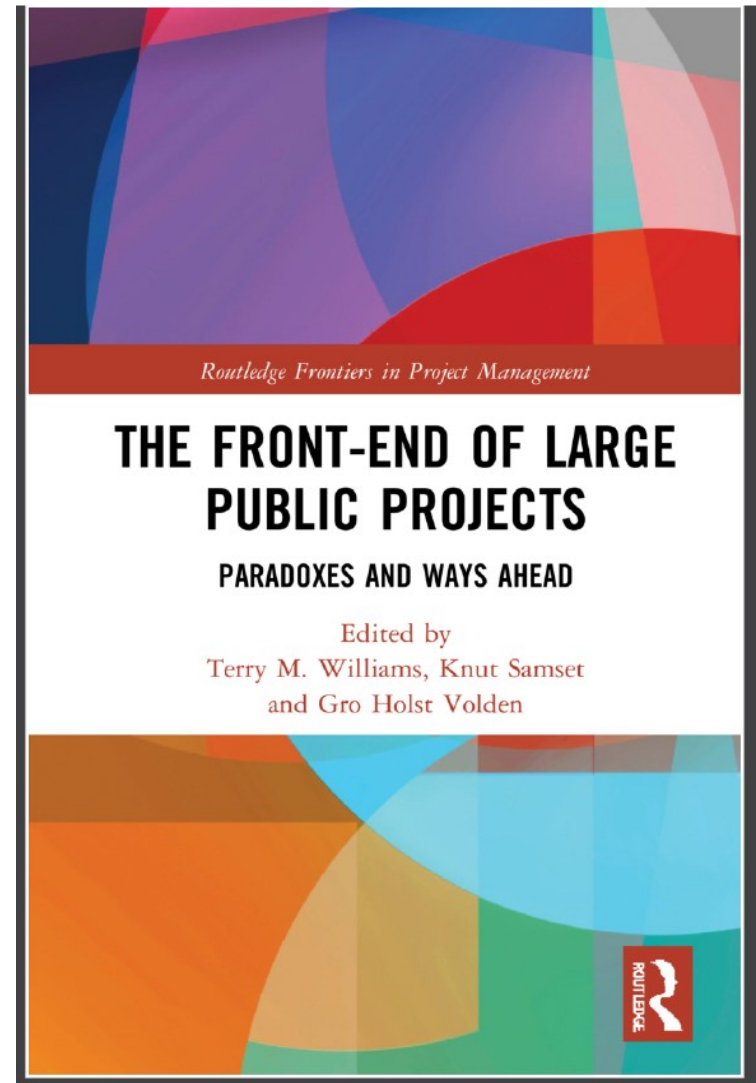*Keywords:* Project governance; Front end management; Paradoxes

1. Introduction

A large and increasing share of the activities taking place in private as well as the public sector is organised as projects. In private sector projects, the ultimate goal is to improve the company's profitability, either directly or indirectly, through improvements in its competitiveness. In public projects, the commissioner is the government, representing the entire society and its taxpayers. In such cases, the benefits of the project must be considered in a broader societal perspective, to ensure that the project provides value for money and contributes to the desired development.
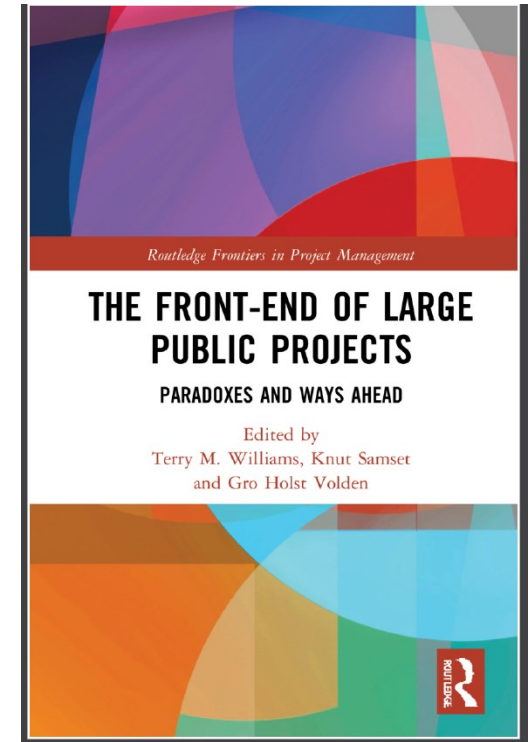
There are many challenges facing public investment projects that must be overcome to achieve project success, such as lack of competence among planners, avoidance of hidden agendas during planning, underestimation of costs and overestimation of benefits, unrealistic and inconsistent assumptions, and how to secure essential planning data and adequate contract regimes. Many of these problems can be interpreted in terms of deficiencies in the analytical or political processes preceding the final decision to go ahead. Hence, the importance of the front-end decision-making phase must be recognized to strengthen project governance.

The term governance is derived from the Latin word *gubernare*, meaning 'to steer'. It refers to the administrative and process-oriented elements of governing, whether undertaken by a government, market, or network, whether over a family, tribe, formal or informal organization, or territory, and whether

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THE FRONT-END OF LARGE PUBLIC PROJECTS

PARADOXES AND WAYS AHEAD

Edited by
Terry M. Williams, Knut Samset
and Gro Holst Volden

- Project success
  Terry Williams

- The logic of the project front-end
  Ofer Zwikael & Alicia Gilchrist

- Undertaking the project front-end
  Monique Aubry & Serghei Floricel

- Estimation
  Richard Kirkham

- Incentives and politics: the perverse incentives paradox: root cause of many other paradoxes; the case of the Dutch Betuweroute
  Bert Wee

- Closing the loop: ex ante and ex post evaluation in order to learn from mistakes and successes
  Knut Samset & Gro Holst Volden

The paradoxes

Ch.2

10 Myopic decisions

1 How success is understood

Ch.4

2 The significance of front end management

Ch.3

5 Strategic alignment

4 The opportunity space

Ch.5

6 Cost estimation

8 Predict and provide

7 Disregarded analyses of costs and benefits

Ch.6

9 Perverse incentives

Chapters 6&7 cover all 10

3 Early information overflow

All chapters
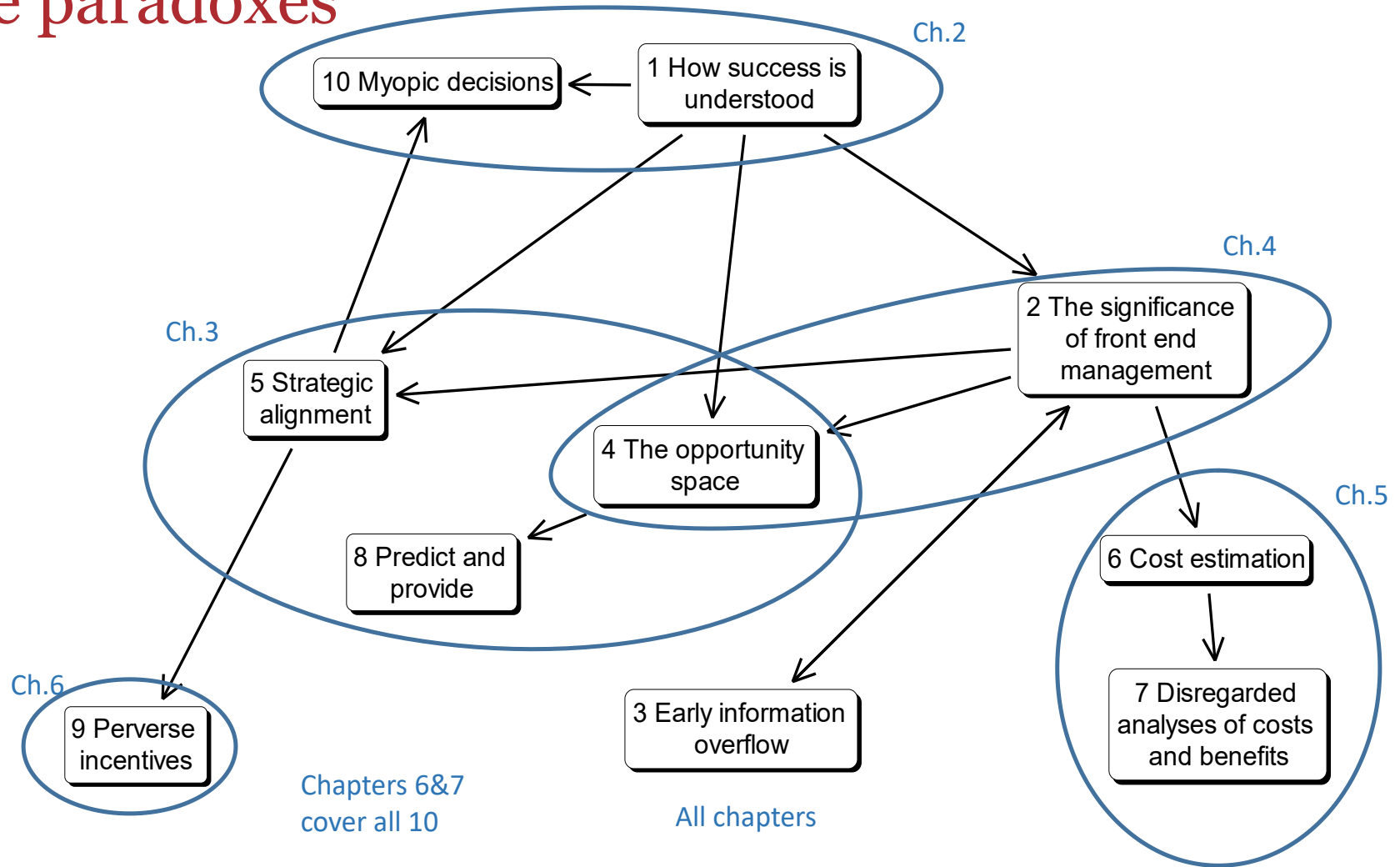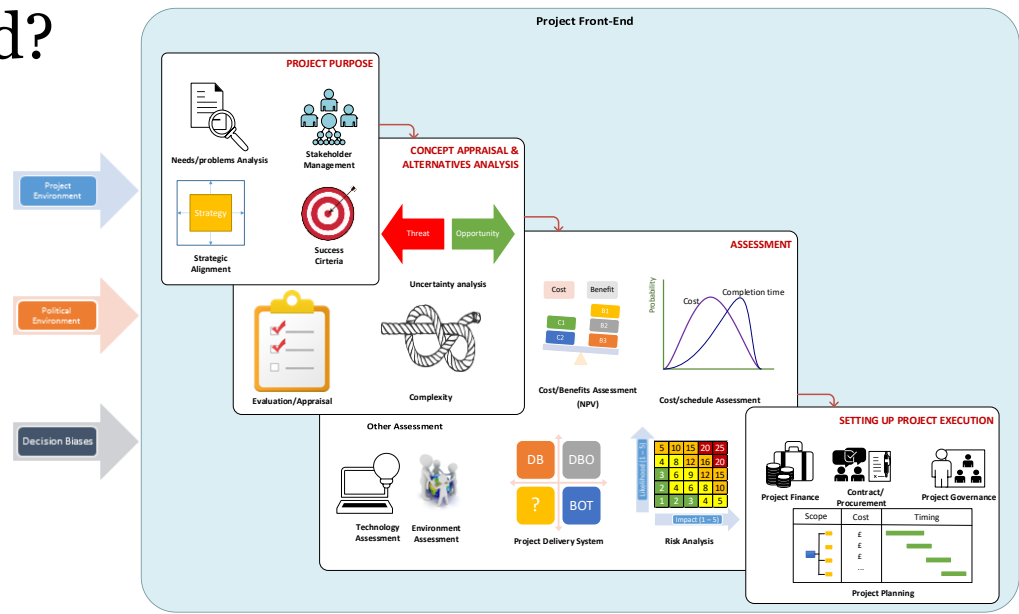
Theoretical basis of this talk

- Research into how projects behave has recently become interested in the "process view" (how things change, in actuality, over time) – see Langley; and a Special Issue by Sergi/Crevani/Aubry

- What about the Front End? We know the elements which make up the Front End but…..

The Front End as a process

- What we call the "Front End" is not a point in time but a process over time – we can think of this as a "project" and apply the "process view".

- It is particularly appropriate as this is a process of discovery – gaining knowledge and reducing epistemic (rather than aleatoric) risk

- It is particularly appropriate for public projects as there are a wide variety of stakeholders with different levels of power and interest.
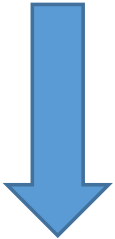
This talk

- We will take the Front End of the project and consider five processes which each go all through the Front End "project"

- We will show four "balances" or "trade-offs" which need to be struck during the processes (from Aubry/Floricel chapter)

- And we will illustrate the processes with vignettes from the book.
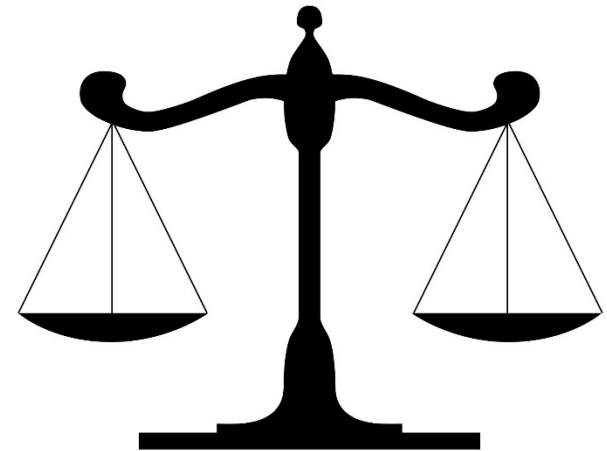
1. The process of defining need and project success

Success criteria

- Discussions about tactical vs strategic success well-known

- Knut's success criteria:

The project				Short-term
	1	efficiency	was the project well managed?	
	2	effectiveness	were the goals achieved?	
	3	relevance	how useful was the output to the organization?	
	4	impact	was the goal appropriate to the organization's purpose?	
	5	sustainability	are the benefits sustainable in the longer term?	
Wider concerns				Longer-term

Paradoxes

#1   The success paradox: success is measured in operational terms only, rather than the wider, strategic perspective

#10 The paradox of myopic decisions: long-term viability is the intention, but the planning horizon is too short, resulting in sub-optimal choices.

Our UK research showed mid-project governmental reviews concentrate on tactical success 70% of the time

Even, in Betuweroute case-study: "it was not made explicit what 'success' would mean, not even in tactical terms

...but for public projects there is a voyage of discovery around "who"....

- Public projects have social and political aspects. So we need to gain views from multiple stakeholders, with different – maybe conflicting - views of what "success" means.

- And for many of these stakeholders (including government), "success" may be ill-defined, ambiguous, unquantifiable.

- And who is responsible for "harvesting" the project benefits?

- And can we disinguish the benefit from this project from the wider, turbulent, social arena?

One of the trade-offs: Pluralism vs core support

- We need to gain all the knowledge we can from multiple stakeholders, with different views and different understandings.

- …. but this very consultation can alter the social dynamics of front-end, can produce ideological pressure-groups and can dilute the understanding of the project's purpose

UK – "A303" project

eg increased economic activity; increased adoption of sustainability principles

eg improved safety on roads, for non-motorized users; and during construction

eg increasing use of non-motorised links/facilities; increased levels of physical activity

eg training opportunities; schools outreach; increased adoption of Social value principles

eg improving community connectivity & cohesion; reducing local road congestion; opportunities for placemaking

eg increasing health & wellbeing; opportunities for innovation; sharing best practice

eg minimising scheme waste and local disruption during construction; mitigating scheme disbenefits

eg conserving & enhancing & improving access to & increased enjoyment of WHS

eg understanding customer needs; improving customer contact; making journeys less stressful

eg enhancing landscape; reducing light pollution; access to nature

Eg creating & improving habitats and connections; improving water quality

Eg delivering high-quality road; journey time / reliability savings

Diagram labels

Improving safety

Walking, cycling and horse riding

Supporting a thriving economy

Sharing knowledge and skills

Transforming the industry

Facilitating WHS vision

Helping people to connect to nature

Supporting healthy ecosystems

An enhanced A303

Improving customer service

Maximising community benefits

Minimising negative impacts

Improving Safety for all

Supporting the Economy

Efficient delivery

Enhancing the Environment and World Heritage Site setting

Improving quality of life for Communities

Improving the Customer experience

Departmental priorities

2. The process of gathering information about solutions

- There is a process of gathering data about the solution space, identifying (or generating) candidate solutions and gathering data about those solutions.

- A process of "Inquiry" (Dewey)

- A main decision-point identified in the Paradoxes is when to move from exploring solutions to developing knowledge about candidates.

Paradoxes

#4   The paradox of the unexplored opportunity space: the choice of conceptual solution is made without systematically scrutinising the opportunity space up front.

Often the chosen solution might not be the most effective

Samset et al. (2014): 11 of 17 major public projects already had a choice of concept when the front end commenced, choice "determined more by decision makers than by analysts".

#8   The paradox of 'predict and provide' (rather than exploring alternative solutions).

One common reason - politics

- "Glory" projects (Lorenzo – Cicmil & Braddon)

- Politics means "project success" can change as public perceptions, or Ministers, change. Paradox #10: The paradox of myopic decisions

"While the analytical process is [with] ..... the professional constituency....... the decision still remains with the political level.....processes and decisions at this level are not always rational" (Paradoxes paper)

- UK C-NOMIS system.

The discipline of a logical process
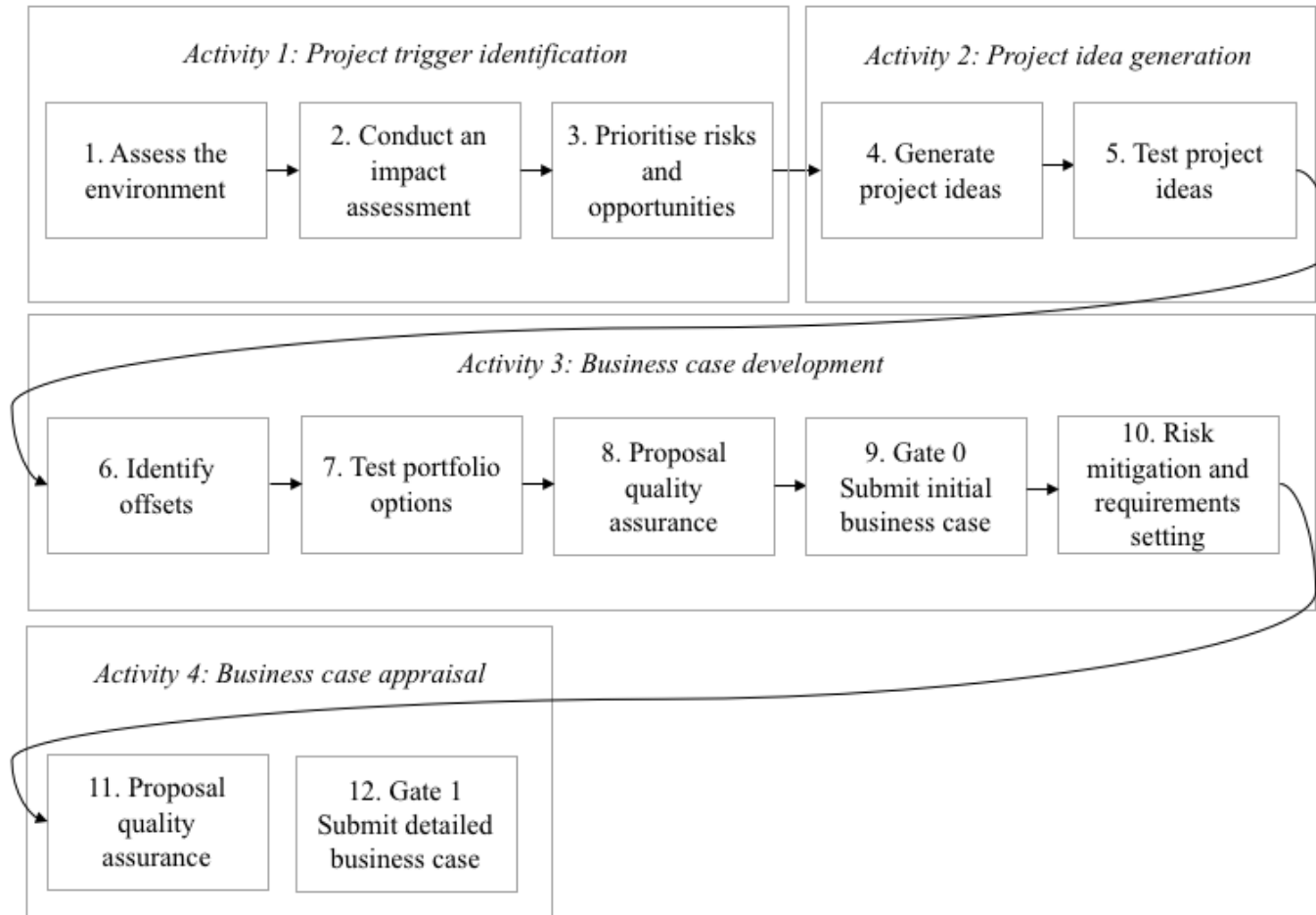
One of the trade-offs: Knowing versus exploring

- Exploring a broad variety of opportunities/options versus producing reliable knowledge about each option

- We start with a project that is ill-defined, with epistemic uncertainty; ambiguities require assumptions and generic experience of previous projects. Different disciplines and organisations bring different types of knowledge, choices have to be made about different types of enquiry, serendipity and creativity, the "Hiding Hand".

- Path dependency means enquiry centres around one solution, and knowledge about one solution often cannot be used for competing solutions
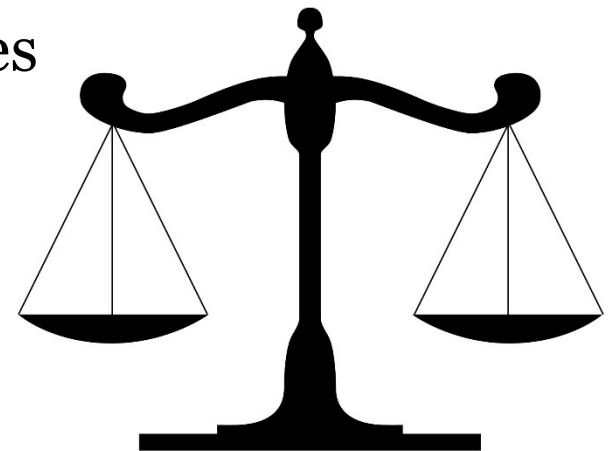
Information overflow

- Paradox #3 The paradox of early information overflow: decisions are confounded by masses of detailed information rather than carefully selected facts and judgments to highlight the essential issues.

- Gigerenzer - less information can be more

- Detailed information can cause spurious credence

- Accurate quantitative information tends to quickly become out of date

3. The process of specifying the chosen solution

- Public perception of rational decisions made at a single point of time at odds with actuality –

  – humans "exploring" options and particularly "knowing" more about particular options

- A journey of discovery and sense-making

- Complexity

- Epistemic uncertainty

We assume the main characters are disinterested but

– cognitive, emotional and social attitudes/reactions
– (Flyvbjerg) "strategic mispresentation"

'underdeveloped' assumptions and optimistic forecasts of future long-run benefits.

- Those who benefit from a positive decision to build are not always those who need to pay (we'll come to this later)

Paradoxes

#2   The paradox of the significance of front-end management: less resources are used up front to identify the best solution than to improve performance during implementation

#5   The paradox of strategic alignment: alignment of objectives highlighted as essential, but in many cases the internal logic of causality and probability of realisation are erroneous.

But another trade-off: Evaluating versus shaping

- Producing a careful, detailed evaluation of project solutions

- …versus efforts leveraging a particular solution to shape the future.

- First assumes a fixed world – more work produces better estimates

- Shaping assumes a fluid world, project outcomes depending on sponsors' efforts to structure the context, especially public projects.

- Complexity and uncertainty: instead of endless evaluation, shape the world around us and make the project a "compulsory passage point towards this future". Project representations become a future-making tool, preparing the public to change their ways of working.
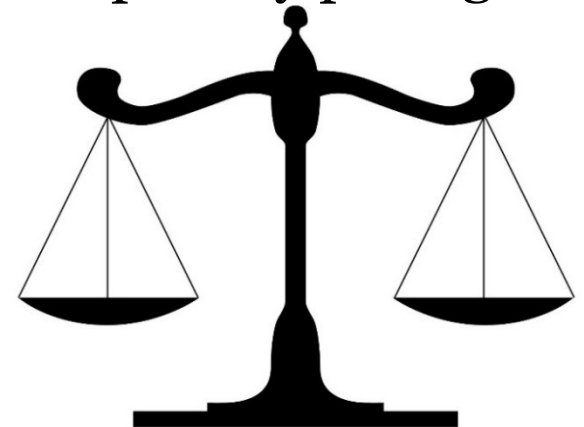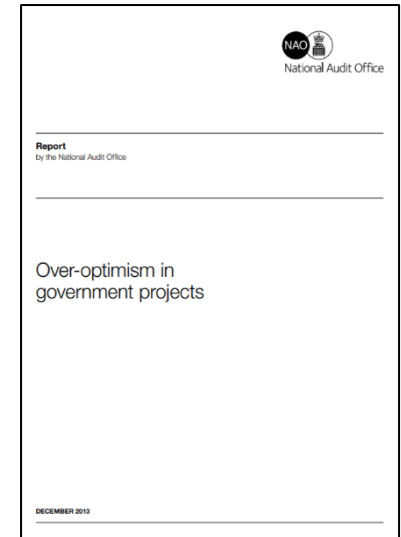
Réseau Express Métropolitain (REM)

- Montreal light rail

- Design team quickly chose to reuse existing infrastructure (for reasons of politics and speed of delivery)

- Other options identified but not studied in detail at the development phase

- Instead of putting efforts into evaluation, the rapid decision "shaped" the project
  - New legal framework
  - Leveraged the use of existing infrastructures and interacting with contractors, and developed knowledge from this shaping process
  - Swift convergence toward a single solution.

4. The process of estimation

Factors that contribute to over-optimism

Independent challenge and accountability

Failures of governance to address weaknesses in planning

Projects are approved despite flaws

Complexity

Incomplete understanding of the challenges departments are taking on

Failure to put skills, resources and experience in place to manage it

Behaviour and incentives

The tendency to be over-optimistic whether unconsciously or deliberately

Culture of the organisation and short-termism exacerbates this problem

Stakeholder

Failure to appreciate the impact and value added from others outside the immediate project team introduces unnecessary risks into the project and fails to address uncertainty

Evidence base

Weakness in the quality and appropriateness of data and modelling techniques distorts the information on which projects are approved and masks the risks

NAO
National Audit Office

Report
by the National Audit Office

Over-optimism in government projects

DECEMBER 2013

Source: National Audit Office analysis

Benefits

- Social / public value.
    - Monetary valuations eg safety
- Stakeholder perceptions
- Causality of benefits
- When should "long term" benefits be assessed?

Complexity

- Public projects are complex – physical, people, politics

- But the public want simplicity and deterministic estimates

- But the front-end is a time of epistemic risk; danger of reductionist thinking.

Lock-in

- Desire for approval can lead to initially low cost estimates

- Actual decision often made early in the process of Front-End leading to "lock-in".

- Escalation of commitment

- Estimation process is parallel with parliamentary cycles, and budgetary cycles, leading to changes in scope, budgetary envelope and attitude.
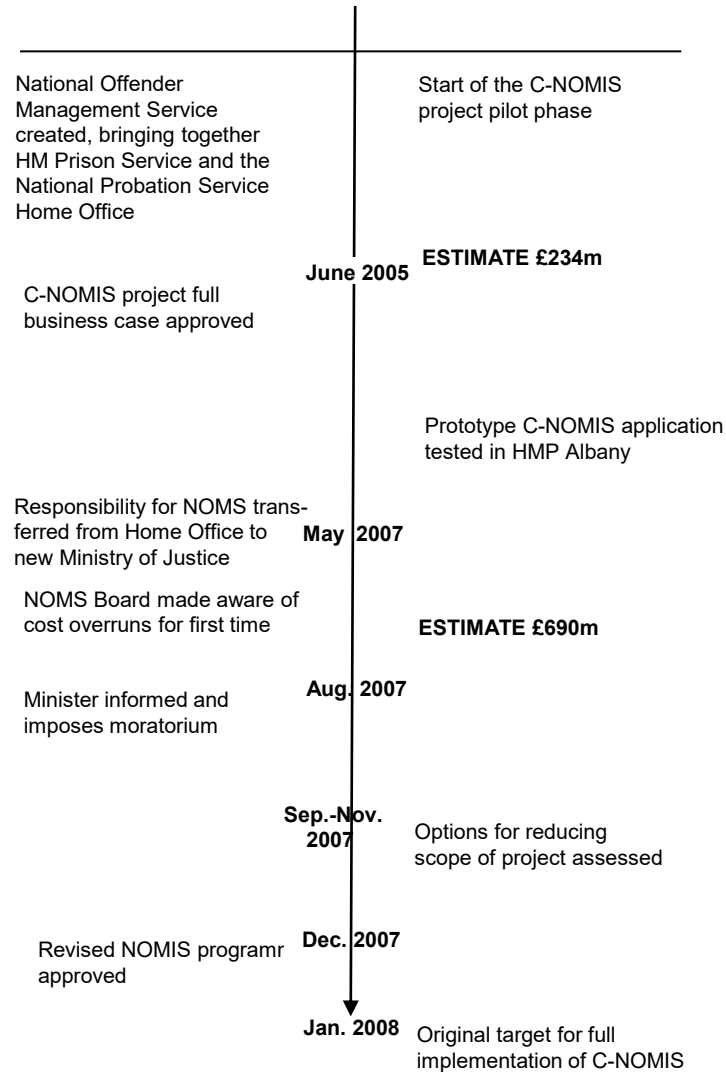
Paradoxes

- #6 The cost estimation paradox: effort is made to get the final cost estimate (the budget) right, while early cost estimates are treated superficially

- *Also, politically:*

- #7 The paradox of disregarded analyses of costs and benefits: detailed estimation of cost and benefits is commonly done up front, but disregarded by decision-makers

Trade-offs

- Knowing   vs Exploring

- Evaluating   vs Shaping

- Allocation   vs Collaboration (coming next!)

UK C-NOMIS system

National Offender Management Service created, bringing together HM Prison Service and the National Probation Service Home Office

Start of the C-NOMIS project pilot phase

June 2005   **ESTIMATE £234m**

C-NOMIS project full business case approved

Prototype C-NOMIS application tested in HMP Albany

Responsibility for NOMS transferred from Home Office to new Ministry of Justice   **May 2007**

NOMS Board made aware of cost overruns for first time

ESTIMATE £690m

Aug. 2007

Minister informed and imposes moratorium

Sep.-Nov. 2007   Options for reducing scope of project assessed

Dec. 2007

Revised NOMIS programr approved

Jan. 2008   Original target for full implementation of C-NOMIS
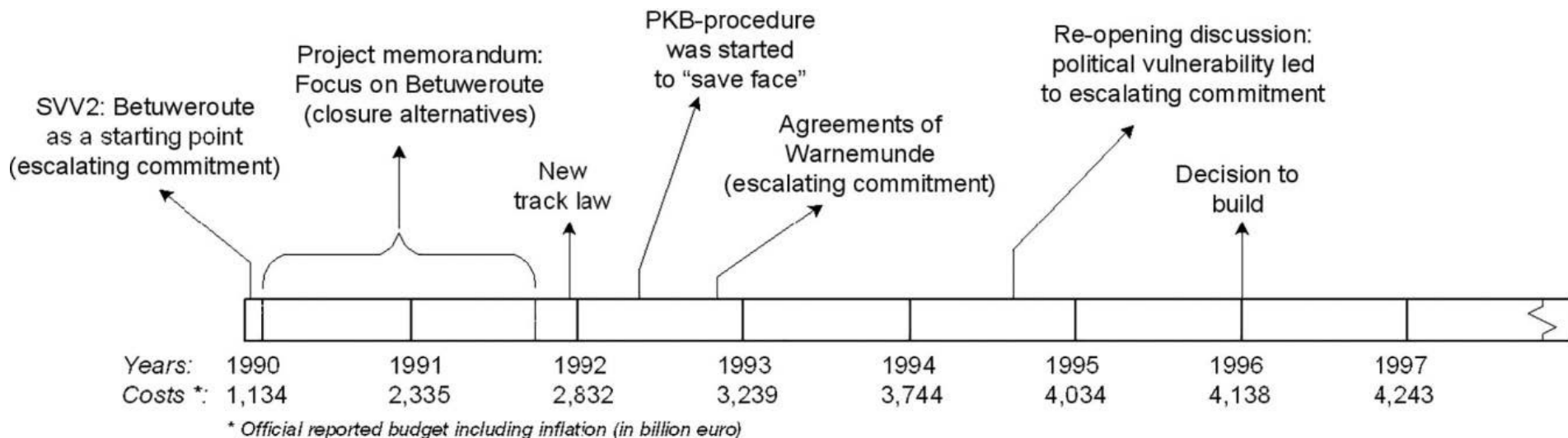
5. The process of defining the implementation project

Betuweroute case-study

- Port of Rotterdam supported the project but did not have to pay

- Proponents of the line came with excessively low cost estimates.

- Official not sleeping for fear politicians would read specific disinterested and better (higher) cost estimates

SVV2: Betuweroute as a starting point (escalating commitment)

Project memorandum: Focus on Betuweroute (closure alternatives)

New track law

PKB-procedure was started to "save face"

Agreements of Warnemunde (escalating commitment)

Re-opening discussion: political vulnerability led to escalating commitment

Decision to build

Years:	1990	1991	1992	1993	1994	1995	1996	1997
Costs *:	1,134	2,335	2,832	3,239	3,744	4,034	4,138	4,243

* Official reported budget including inflation (in billion euro)

Paradox

- #9 The paradox of perverse incentives: availability of public funding with no financial obligations for the beneficiaries may cause perverse incentives and result in counter-productive projects.

Internal accountability

Accountability – UK SRO accountable to parliament.

But

- how do you disentangle benefits from the movements of the economic environment?

- there may be changes from original project (launched under a previous national budget or government)

- the emergent and sometimes fluid nature of benefits

- again, who is responsible for "harvesting" project benefits?

Private sector

- The implementation organisation tries to achieve project outputs - probably not the same as trying to achieve the strategic success objectives of the Government Departments.

- Delivery mechanism needs to align the motivations of the contractor with the public sector partner.

- Consideration when the success criteria of the public sector changes.

"Best practice" says carefully develop the project "objects" – helps allocate risk, limits exposure to over-runs/spends, helps fixed price contracts. But

- Division in process as client hands-over to contractor. Better if there is collaboration early on.

- Clear allocation means rigidity – in a turbulent and uncertain environment, which can lead to conflict.

Last of the trade-offs: allocation versus collaboration

- Efforts to develop unambiguous allocation of responsibilities and risks between participants

vs

- Creating conditions for a collaborative elaboration and implementation of the project
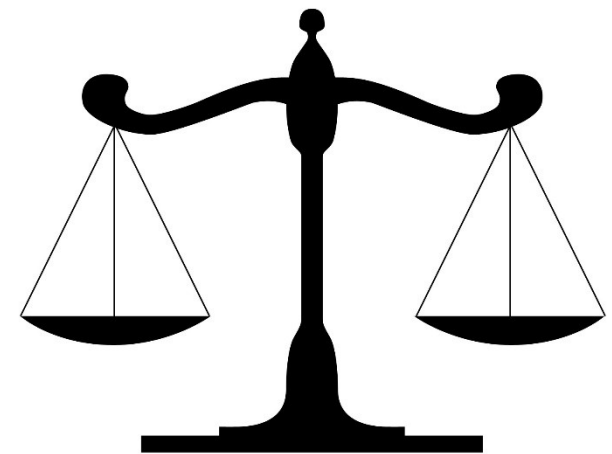
We've looked at processes of

- defining need and project success

- gathering information about solutions

- specifying the chosen solution

- process of estimation

- defining the imple-mentation project

Pluralism   vs   Core Support
Knowing   vs   Exploring
Evaluating vs   Shaping
Allocation vs   Collaboration

Thank you for listening!