



Quality control and due diligence in project management: Getting decisions right by taking the outside view

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Abstract

This paper explores how theories of the planning fallacy and the outside view may be used to conduct quality control and due diligence in project management. First, a much-neglected issue in project management is identified, namely that the front-end estimates of costs and benefits – used in the business cases, cost–benefit analyses, and social and environmental impact assessments that typically support decisions on projects – are commonly significantly different from actual ex post costs and benefits, and are therefore poor predictors of the actual value and viability of projects. Second, it is discussed how Kahneman and Tversky’s theories of the planning fallacy and the outside view may help explain and remedy this situation through quality control of decisions. Third, it is described what quality control and due diligence are in the context of project management, and an eight-step procedure is outlined for due diligence based on the outside view. Fourth, the procedure is tested on a real-life, multibillion-dollar project, organized as a public–private partnership. Finally, Akerlof and Shiller’s recent discussion in economics of “firing the forecaster” is discussed together with its relevance to project management. In sum, the paper demonstrates the need, the theoretical basis, a practical methodology, and a real-life example for how to de-bias project management using quality control and due diligence based on the outside view. © 2012 Elsevier Ltd. APM and IPMA.

Keywords: Quality control; Due diligence; Front-end management; Planning fallacy; Outside view; Forecasting; Cost–benefit analysis; Ex-post analysis; Daniel Kahneman

1. Introduction

1.1. “Third Wave” research

The 2011 *Oxford Handbook of Project Management* identifies a “third wave” in project management research characterized by a positioning of the management of projects as a vital part of general management (Morris et al., 2011:3). With projects taking center stage as delivery model for products and services in most orga-

nizations, project management can no longer be seen as a specialist subcategory of management brought to bear on special cases, but must instead be seen as a core business activity, vital to organizations as a whole. As part of this development from specific to general management, theory has developed from project-based theory to more general theory, substantially strengthening the academic base of project management, according to Söderlund (2011) and Turner et al. (2011). The present paper is intended as a contribution to, first, the third wave’s focus on general management and, second, fortifying the theoretical basis of project management by focusing on general theory and its importance to project management.

Winter et al. (2006), Williams et al. (2009), Edkins et al. (2012), and many others have identified high-quality front-end management as crucial to good project delivery. The front-end has been singled out as the perhaps most important stage in the overall project cycle in securing the success of projects, or avoiding failure. Within the front-end, estimating expected outcomes of projects and evaluating whether they justify investing

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in a given project is a key activity, and maybe the most consequential one, because ideally estimates inform the decision of whether projects will go ahead or not.¹ Furthermore, the quality of estimates will highly influence whether a project is deemed successful or not in meeting its objectives. Yet, as pointed out by Edkins et al. (2012:6) there is little about this in the research literature, nor about how the quality of estimation may be improved. It is the purpose of the present paper to help fill this gap in the literature.

Specifically, the paper brings Nobel prize-winning economic theory about the planning fallacy and the outside view, developed by Daniel Kahneman and Amos Tversky, to bear upon quality control and due diligence in the management of projects. Previous studies have documented a much-neglected topic in research and practice, namely that ex ante estimates of costs and benefits – used in the business cases, cost–benefit analyses, and social and environmental impact assessments that typically support decisions on projects – are often significantly different from actual ex post costs and benefits (Flyvbjerg, 2009). As a result, such business cases, cost–benefit analyses, and social and environmental impact assessments are typically poor predictors of the actual value and viability of projects and cannot be trusted as a basis for informed decision making. The idea proposed in the present article is:

1. to develop quality control and due diligence to establish just how reliable, or unreliable, the business case, cost–benefit analysis, and social and environmental impact assessment are for a given project, and
2. to decide the implications of this for the project go-ahead.

Kahneman and Tversky did not develop their theories with these purposes in mind. The thesis is, however, that their theories will be highly effective in quality control and due diligence of planned projects and thus in improving decision making on projects. The existing literature on quality control, due diligence, and risk assessment in project management does not cover this particular approach to improved decision making (Breakwell, 2007; De Meyer et al., 2002; Fischhoff, 2002; Perminova et al., 2008; Winch, 2010).

Due diligence is generally an evaluation of the assets of a company, an investment, or a person. Here, due diligence is specifically understood as an evaluation of the costs and benefits deriving from investing in a given project, and especially whether the estimated costs and benefits for that project are likely to materialize. Due diligence is thus developed to be used as “quality control” of business cases, cost–benefit analyses, and the go-decision in projects. Data to test the thesis are drawn from a large database on estimated and actual costs and benefits in major projects and programs. Theory and methodology are developed at a level of generalization sufficiently high to allow their use, not

only in business cases and cost–benefit analyses, but also in social and environmental impact assessments, which are typically also key in decision making on major projects, and which also suffer from the problem of predicted impacts often being very different from actual ones (Flyvbjerg et al., 2002:49–64).

2. The planning fallacy and the outside view

Flyvbjerg et al. (2002, 2005) and Flyvbjerg et al. (2002) showed that forecasts of costs and benefits of major projects are generally highly inaccurate and biased. These findings have been verified by other similar research (Arena et al., 2006; Dantata et al., 2006; Flyvbjerg and Stewart, 2012; Gardener and Moffat, 2008; Merrow, 2011; Moløkken and Jørgensen, 2003; Scott et al., 2011; Williams et al., 2009). Kahneman and Tversky (1979a, 1979b), in their Nobel-prize-winning work on decision making under uncertainty, argued that such inaccuracy is caused by a systematic fallacy in decision making causing people to underestimate the costs, completion times, and risks of planned actions, whereas people overestimate the benefits of the same actions. Following and expanding upon Buehler et al. (1994), Lovallo and Kahneman (2003:58) would later call such common behavior the “planning fallacy.”² Kahneman (1994) argued that this fallacy stems from actors taking an “inside view” focusing on the constituents of the specific planned action rather than on the outcomes of similar actions already completed. Kahneman also identified a cure to the fallacy, namely taking an “outside view” on planned actions, which consists in using experience from previous similar ventures already completed, including (a) the average outcome in sets of such ventures and (b) distributional information about outcomes. Distributional information is here understood as data on variation from the average outcome, for instance as expressed in common statistical measures such as standard deviation and variance. For instance, students asked how long they will take to write their thesis typically significantly underestimate the time, trying to understand and estimate the task inside-out. If they would simply collect data and calculate the average of how long it took 10–15 fellow students in last year’s class in the same program they would arrive at a much more accurate estimate, according to Kahneman. Below we will see how doing so in a systematic fashion may be used for performing due diligence of cost and benefit estimates, and for uncovering just how biased and error-prone such estimates typically are.

The theoretical and methodological foundations of the outside view were first described by Kahneman and Tversky (1979b). As explained in Flyvbjerg (2006), thinking about the outside view was originally developed to compensate for the type of cognitive bias that Kahneman and Tversky had found in their work. This work shows that errors of judgment are often systematic and predictable rather than random, manifesting bias rather than confusion, and that any corrective prescription should reflect this. It also shows that many errors of judgment are shared by experts

¹ This is assuming that the project has not fallen victim to lock-in at an earlier stage and that promoters are genuinely interested in understanding outcomes, which is not always the case, for instance where promoters have locked in on a certain design or construction interests dominate operations interests (Cantarelli et al., 2010).

² Buehler et al. (1994) originally used the term “planning fallacy” to explain error and bias in schedule estimates. Later, the term has been used to also explain error and bias in cost and benefit estimates, in addition to in schedule estimates.

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