Bent Flyvbjerg, Nils Bruzelius, and Werner Rothengatter, Megaprojects and Risk: An Anatomy of Ambition. *Cambridge: Cambridge University Press, 2003. ISBN 0-521-804205*.

Megaprojects and Risk: An Anatomy of Ambition

by Porter K. Wheeler

This book makes an important contribution to understanding the infrastructure development process worldwide, with focus on megaprojects. Megaprojects, essentially multi-billion dollar infrastructure developments, have become synonymous with development ambitions gone astray, albeit well-intentioned. Yet truly, most significant projects today are megaprojects as urban populations, goods movement, and demands for mobility have far outpaced infrastructure development. Notwithstanding the tortured record of experience with projects like Boston's "Big Dig" Central Artery, more capacity and other major improvements seem inevitably needed. Hence, sound thinking about how to get there from here is very much welcome.

Flyvbjerg, *et al*, make a resonant case that the central problems at the heart of the matter are lack of accountability and inappropriate risk sharing, notwithstanding the admitted complexity and unique characteristics associated with planning, financing, and developing individual megaprojects. Furthermore, the authors conclude on a hopeful note that outcomes can be improved by reforming the institutional arrangements that form the context of megaproject decision making. Better yet, they provide a roadmap to such reform that warrants close attention.

The book is accessibly written for a fairly broad audience and provides a convenient framework for addressing megaprojects as a generic species. The history of project cost overruns is traced and summarized, with an informative array of examples, ending with the warning: "don't trust cost estimates" (p. 20). Demand forecasts that provide the underpinnings for project development are examined in equally harsh light, ending with a similar warning: "don't trust traffic forecasts, especially for rail" (p. 31). Providing further access to their examples, the book includes extensive notes and bibliography (49 pages worth).

There is substantial and informative, but occasionally repetitive, focus on three modern-era megaprojects:

- the Channel tunnel linking France and the UK;
- the Great Belt link, connecting Denmark with continental Europe;
- and the Oresund link between Sweden and Denmark.

On the whole, this information should prove helpful to North American practitioners who may have limited or inaccurate exposure to those projects, which are set forth in such exemplary fashion. Understanding the applied development history and economic underpinnings can be a critical contribution. For example, the U.S. thrust to develop demonstration projects for MAGLEV might benefit from knowing more about the German experience on the Berlin to Hamburg route during the 1990s, as set forth here.

To my mind, this book is a promising, thought-provoking contribution to dealing with infrastructure development issues. The authors' suggestions are to institute accountability, especially at the project

development and appraisal (evaluation) stages, before construction commitments are set "in concrete" and short-term beneficiaries mobilized. After examining the lessons learned from recent privatization experience, the authors are certainly correct to conclude that public-private collaboration is crucial. This has been recognized by USDOT for more than a decade.[1] Neither sector can optimize an approach to or finance megaprojects on their own.

The authors set forth four key instruments of accountability for which they suggest rearrangement of the project development process:

- **Transparency**, focusing on public scrutiny of all information, active (and early) participation from stakeholder groups, and independent peer reviews;
- **Performance Specifications**, setting forth all requirements relating to policy objectives before approving the technical solution (bridge, tunnel, etc.), and including environmental outcomes and safety issues, not just financial feasibility;
- **Regulatory Regime**, formulating the rules for financial and economic performance, necessary complementary investments, and methods for dealing with risks (including political risk, in a prospective fashion); and
- **Risk Capital**, emphasizing that projects should be structured so that private capital is put at risk (without sovereign guarantee), for at least one-third of total capital needs. Private capital at risk is intended to shift risks to those better able to understand and protect against them, and to obtain more realistic assessment of those risks from the private sector.

Reaching even further, the authors then propose two alternative paths for addressing these four areas and obtaining more accountable decision making:

- **Concessions Approach**, built around build-operate-transfer (BOT) or even design-build-finance-operate (DBFO) contracting approaches, where private companies bid for the right to build and operate specific projects; or
- **State-Owned Enterprise Approach**, with careful attention to transparency, clear performance standards, competent board and staff, and private capital placed at risk and not fully guaranteed by the host government.

Commentary

Are megaprojects different?

I am not convinced that the development particulars differ that much for *large* projects, but certainly the magnitude of resources committed, cost overrun exposure, and associated societal benefits or disbenefits and their lasting nature are of extreme importance. These are not only sunk costs, and irreplaceable resources committed, but as a consequence the developmental benefits are likewise sunk and will influence our mobility for decades to come. While not a zero-sum game, certainly much will be foregone in the way of future scenarios when billions are committed to a megaproject.

This analysis is useful but also a little bit dangerous.

It's useful because it assembles data on numerous large development projects, primarily in Europe, synthesizes, and gives us coherent suggestions about how to improve the infrastructure project decision-making process. It's a little dangerous because it suggests strategic misrepresentation by project sponsors and warns the reader: "don't trust cost estimates" and "don't trust traffic forecasts." This begs the question, who and/or what should we trust?

Is the answer more participation?

The authors argue that more participation and transparency are part of the solution. I have no desire to shoot the messenger, but meeting all demands of all stakeholders will not necessarily give us more effective megaprojects. In essence, engaging the full range of stakeholders (political

representatives, environmental groups, and many others) can easily become anarchic (as the authors themselves note early on) unless mechanisms can be institutionalized for effectively responding to or avoiding their demands.

- Environmental demands. The authors themselves ask whether some of the environmental demands are warranted. For example, should the Hannover-Berlin rail alignment be shifted to preserve rare bustard habitat at a cost per bustard preserved that was 25 times the value assigned to human life? Environmental adaptations come at a cost, especially so when they are imposed late in the planning process. The authors admit that "rarely is there a simple truth about such projects," and I would add that we cannot expect any simple truths.
- Performance standards. Suggesting adoption of an international development bank approach relying on performance standards is meritorious but has its own deficiencies. Performance standards are desirable but fraught with difficulties. Such standards are not inherently clear, and appointed boards (both public and private) are not inherently competent, though the potential is certainly there if adequate and long-term provision is made for accountability.
- Local demands to augment the project. The authors note that German high speed rail between Cologne and Frankfurt was designed with one stop to attain specified trip times and attract passengers. After responding to new requirements by the Lander (German states) the revised plan incorporated five stops, each with a new station, and carried much higher costs while speed and ridership were negatively affected. There will always be political realities that must be addressed, but the feasibility of the project must remain paramount.
- This example reminded me of the US high speed rail proposals put forward in the early 1990s where the Washington to Atlanta route plans showed no stops in South Carolina, an omission not lost on the Chairman of the Senate Commerce Committee (representing South Carolina).
- It also recalls the US Northeast Corridor Improvement project, where high speed rail passenger service was promoted with multiple billion dollar improvement grants (100% federally supported). The research indicated that rail service would be competitive and warranted if the Washington-to-New York route could be covered in two and one-half hours. This performance criterion was built into the legislation providing the improvement funding, a clear research-based standard imbedded in the policy decision to move ahead with the project.2 However, even the new Acela train sets do not satisfy that performance in regular service.

The authors' focus on accountability, private involvement, and proper risk assumption are certainly a large part of the answer to better project decision making. Use of independent experts is appealing to those of us that style themselves as such, but the economist in me suggests close attention to the Washington version of the "golden rule," that is, whoever is paying for the independent experts will almost certainly want to make the rules. Structuring such an independent review board for megaprojects will certainly be a challenge, but one worth taking on.

Endnotes

1. Passage of the Intermodal Surface Transportation Efficiency Act of 1991 provided more flexibility for private involvement and USDOT convened a symposium in 1993 to develop ways of overcoming barriers to public-private partnerships. See USDOT, Federal Highway Administration, Summary of the Federal Highway Administration's Symposium on Overcoming Barriers to Public-Private Partnerships, Number 11 in the Searching for Solutions Series (September 1994).

2. See, for example, my discussion of the role of research and analysis on the policy decision to fund the Northeast Corridor in "The Northeast Corridor: Has Research Influenced Policy?" in Transport Decisions in an Age of Uncertainty, Proceedings of the third World Conference on Transport Research, April 1977.

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