Mega Delusional: The Curse of the Megaproject

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Their costs are astronomical and benefits questionable, yet megaprojects have never been so popular. What's going on?

As Brazil prepares to host the 2014 World Cup and the 2016 Olympics, money has become a key issue. Infrastructure work is expected to cost a budget busting $14.5 billion for each. In a show of outrage, Brazilians rioted, angered at the rising cost and scandals of these megaprojects among other things.

Across the world in Russia, the bill for hosting the 2014 winter Olympics in Sochi is claimed by some to have spiralled to $50 billion from $6 billion. The vitriol is flying. Meanwhile the UK’s plan to build its second high-speed rail link has seen cost estimates rise to £42.6 billion from £32.7bn and a war of words over its worth. Then there are the many IT and defence projects with vast overspends and dysfunctional outcomes. Waste from failed and underperforming IT projects in the US alone is estimated at $55 billion annually.

Despite such a poor track record, megaprojects have never been more popular with politicians. Total global spending on them is $6-9 trillion annually.

What drives this enthusiasm in the face of repeated failure? There is the rapture engineers and technologists get from building large and innovative projects, pushing the boundaries for what technology can do. Similarly politicians love building monuments to themselves and their causes. Grand schemes are media magnets; politicians seem to enjoy few things better than the visibility they get from starting megaprojects, except maybe cutting the ribbon of one in the company of royals or presidents.

Equally there is the delight of business people and trade unions in making lots of money or seeing jobs created off megaprojects. Contractors, engineers, architects, consultants, construction and transportation workers, bankers, investors, landowners, lawyers, and developers lap up the rewards while the financial risks frequently fall on the taxpayer. Finally, there is aesthetic pleasure in something very large that is also iconic. Sydney Opera House anyone?

All these are drivers of the megaproject. They ensure those who benefit are plentiful and want more of the same.

Of course a sceptical public does need to be persuaded. The sell is usually on the grounds of job creation, economic gains, better public services and environmental benefits. But there is a big if - such benefits only truly follow if the project is “done right”. Only when this caveat is disregarded – as
it often is – can megaprojects be seen as an effective way to deliver infrastructure. In fact, conventional megaproject delivery has a dismal record in terms of costs and benefits.

In reality, many psychological factors are at work to maintain this status quo. They include uniqueness bias in terms of technology and design - that is planners and managers tend to see their projects as firsts, which impedes learning from other projects. Frequently there is overcommitment at an early stage, resulting in a “lock-in” mentality. California State Assembly member Willie Brown, discussing a cost overrun on the San Francisco Transbay Terminal megaproject this year put it well: “The idea is to get going. Start digging a hole and make it so big, there’s no alternative to coming up with the money to fill it in.”

A false sense of control is also common and ignores “black swans” - extreme events with massively negative outcomes to which megaprojects are overexposed. Managers tend to treat projects as if they exist in a deterministic universe of cause, effect, and control. Last but far from least is the optimism bias which plagues cost estimates.

Some say this doesn’t matter, because while optimism bias rules cost estimates, pessimism rules benefit estimates, so it all balances out in the end. They say we need such biases and that nothing grand would ever get built if we let all the things that could go wrong put us off, that human creativity will always get us through. Economists such as Albert Hirschman pioneered such views and they took root firmly.

Today we have much better data and theories. We know that, while there may be elements of truth in such thinking, the samples and conclusions of Hirschman are unrepresentative. In particular, the odd assumption that optimism would apply to cost estimates but pessimism to estimates of benefits has been disproved. Rather optimism bias applies to both. It leads to costs outstripping projections and far fewer users of your new transport link than forecast.

In fact the situation is even worse. What we often have is an inverted Darwinism; the survival of the unfittest. It is not the best projects that get chosen, but those that look best on paper. And the projects that look best on paper are those with the largest cost underestimates and benefit overestimates. They are disasters waiting to happen.

It has become increasingly clear that when megaprojects go wrong they are like the proverbial bull in the china shop: they can wreak serious damage on national economies. It has become similarly clear to many involved that something needs to be done.

Fortunately in some cases it is. For example, the UK Treasury now requires all ministries to develop and use procedures for megaprojects that curb optimism bias. Switzerland and Denmark have followed that lead. Australia conducted an inquiry into how to secure more successful delivery of significant projects. Similarly, the Netherlands works to limit misinformation about large infrastructure endeavours. In Boston, cost overruns in the notorious ‘Big Dig’ road tunnel proved a catalyst for change there.

Finally, research on how to reform megaproject management is beginning to have a positive impact. Great strides have been made in understanding what causes failures. For instance, we now better understand the roles played by various psychological biases.
And with a better understanding has followed a better grasp of cures. The truly optimistic might even say that one day the word megaproject will no longer be synonymous with unexpected costs and questionable benefits.

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