

Is there a cure for cost overruns?

By LINDSEY COLE Feb 5, 2016

With the country set to embark on the biggest infrastructure building boom in a generation, there is a lot at stake if it doesn't go right, said Matti Siemiatycki, the author of a paper which looks at the causes of cost overruns on megaprojects and recommends several solutions.



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From left, Ehren Cory, of Infrastructure Ontario, James Purkis, of Metrolinx, **Andy Manahan of the Residential and Civil Construction Alliance of Ontario** and University of Toronto associate professor Matti Siemiatycki discuss the findings of Siemiatycki's recently released report on Cost Overruns on Infrastructure Projects: Patterns, Causes, and Cures during an event at the University of Toronto.

"Cost overruns and delays are one of the few issues that unite this country," he said. "There's something much bigger going on than just a challenge of how government delivers projects. This is something that's endemic and inherent in big scale infrastructure projects."

Siemiatycki, an associate professor at the [University of Toronto](#), wrote the paper with the support of the Institute on Municipal Finance and Governance. The paper, entitled Cost Overruns on Infrastructure Projects: Patterns, Causes, and Cures, was released during an event at the University of Toronto's [Munk School of Global Affairs](#). The evening also included a panel discussion involving Ehren Cory, divisional president of project delivery with [Infrastructure Ontario](#) (IO), James Purkis, executive vice-president of regional express rail with Metrolinx, who both commented on the report's findings, and moderator Andy Manahan, executive director of the **Residential and Civil Construction Alliance of Ontario**.

The report notes three main explanations for cost overruns and delays: technical challenges, over-optimism and strategic misrepresentations.

"Once projects get into the big scale they start to have these problems," Siemiatycki explained, adding the Spadina subway extension is an example of cost overruns in Toronto alone. "The costs of that embarrassment are starting to escalate quite significantly."

While complex megaprojects tend to run into technical challenges, Siemiatycki said several researchers studying human behaviour have also noted that people underestimate the cost and time required to complete a project. This is called "planning fallacies" or "optimism biases."

While this may not be intentional, he did state there are some cynical aspects to be considered. He cites an argument made by Bent Flyvbjerg, a professor of business at Oxford University, who states the real causes of cost overruns can be categorized into two groups: fools and liars.

"Fools are the reckless optimists who see the future with rose-tinted glasses," the report quotes Flyvbjerg as saying. "Liars deliberately mislead the public for private gain, fiscal or political, by painting overly positive prospects of an investment, just to get it going."

Siemiatycki came up with five possible strategies to the cost overrun problem.

The first is to use big data to monitor projects and report on cost overruns.

"We need to get smart about this," he said. "We need to be collecting data on estimated and actual costs. We need to be understanding how the performance penalties are being used across multiple organizations. We need to really be studying change orders. We can become much more predictive. As they're going on, what are the red flags that we should be looking for?"

Both Cory and Purkis were in agreement on this point, but Cory added there are some challenges.

"I think the biggest problem is...the lack of standard language or taxonomy," he explained.

"What you'd love to be able to do with data is not just talk about project performance but root causes. Until you can create some consistency that will make data very challenging, but I think it's a place that's very ripe here in Ontario as it is elsewhere."

Siemiatycki's second recommendation involves drawing on past experience to award contracts to the best performing firms.

"We tend to use a lowest cost procurement model," he said, adding his potential remedy is "flipping the incentive from every firm coming in low and then seeing their prices escalate, to now saying you have an incentive to do this properly."

It was a concept that received mixed reviews from the panel.

Cory says for smaller capital projects IO does so by using a scoring system.

"Where we don't do it yet...is as you get into the larger scale projects. It's harder. Those projects take five and six years to see through completion, so you don't have the same quick feedback loop. They are done in consortia and teams change on each bid," he said.

"One of the things we often feel constrained by is we have to score based on the grid we have and the criteria we have and we know that just down the road we're working on a project with the same contractor and having problems. It's a pretty horrible feeling to feel constrained from using obvious data."

However, he noted basing everything on performance can have drawbacks.

"There's always a tradeoff...in whether that creates a closed market, whether that makes it harder for new entrants and whether you create a closed loop."

Siemiatycki's third recommendation calls for investment in training programs for government staff.

"Raise the stakes and raise the training of the people who are managing these projects," he added.

Purkis stated in megaprojects sometimes there are no simple solutions when many parties are involved.

"Generally, the ones that don't go too well are very complex and they've always got unique constraints and challenges," he explained.

"It's really establishing the project governance and not the political governance at the start of the program, so that the right people are engaged. Decisions are based on facts."

Siemiatycki's final two recommendations include using data from previous projects to create more accurate and precise cost estimates with state-of-the-art forecasting techniques and taking advantage of public-private partnerships (P3s) for some projects. He says P3s can "transfer risk to the private sector. What you're doing is essentially buying an insurance policy against cost overruns."

Cory said overall when a megaproject starts badly, and when human nature interferes, it's difficult to bounce back.

"The psychological factors...they are kind of impossible to recover from in many ways. They are setting the project out on the wrong foot from the get-go," he said.

"There's no great project management that recovers you from that."