

Project Portfolio Optimization

A utility company case study

May 2012

A publication from
the Project Portfolio
Optimization practice



This case study illustrates how Project Portfolio Optimization helped one client solve their significant capital deployment challenges.

Our client, a **public utility**, was faced with a difficult budget decision every year:

- about 500 capital projects, totalling a \$600 million first-year investment,
- competing for a fiscal year budget half that size—\$300 million.

Previous capital deployment approach: Funding cases were made and examined on an individual project basis, but without a good method to:

- capture as many of a project's benefits as possible, and
- assess overall, the quality of the utility's investments decisions.

Key challenges

This company faced several **key challenges** associated with their capital efficiency problem:

- **Different projects have very different impact:** Some projects create cost savings, others improve electricity reliability or decrease the likelihood of outages. Some affect a large community of residential users, others impact a few high-profile commercial customers. Some projects are specifically created to address health and safety concerns. Almost all of these projects have, on one level or another, an impact on the environment and on the company's stakeholders which was also worth tracking and valuing.

In the face of this plethora of benefits, comparing 500 projects on an apples-to-apples basis constituted a major challenge. They knew they wanted to implement some kind of benefit-to-cost analysis, but didn't know where to start to really assess the benefit.

- **The need to address the "portfolio conundrum":** Even if we were able to correctly evaluate each project's benefits, which of them would create the maximum "bang for the buck"? Our client wanted to be as efficient as possible with their use of capital and was used to benefit-to-cost ratio analysis. But the latter method didn't tackle these issues:
 - **budgets** were planned over a five-year period,
 - **regulatory requirements** sometimes overrode B/C ratios, and
 - **technical dependency requirements** (substations, transmission lines, and feeders, for example, must all be funded in the right order) additionally meant that B/C ranking was insufficient to properly prioritize these investments.

- **Projects could be funded at various funding levels:** For example, was it worth pushing a transmission line a little further than strictly necessary, into an area that our client knew was likely to see a large population growth over the next few years, or should they stick with the strict minimum funding level? Should they over-dimension a substation to allow for the demand of a potential high-profile industrial customer to be satisfied or wait until a future time to do an upgrade?

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Our approach

Our approach with this client consisted of three steps:

1. Framing

In the initial framing stage, we helped our client:

- **Structure** the budgeting problem.
- **Identify** the various types of benefits each project contributes.
- **Create** measurable performance scales for the benefits that didn't have an obvious metric, such as environmental impact and energy quality.
- **Quantify** and factor in both the public and worker health and safety risks.
- **Measure** the impact of these projects on our client's stakeholders such as local communities and regulators.

We even measured the cost savings certain projects would create for rate-payers, and were able to quantify those benefits. To roll all these benefits into a single measure of value, we applied multi-attribute analysis techniques with senior executives and were able to capture their priorities and their willingness to trade off some of these objectives (e.g., cost savings) for others (e.g., reliability improvements). We also identified the various constraints (budget, regulatory, technical) faced by the client and incorporated them into our framework.

2. Pilot

With a valuation blueprint in place, we first applied it to a handful of pilot projects to see how the valuation and prioritization panned out. Based on these initial results, we:

- **Made a few minor changes** to the framework as a result of this pilot. For example, we adjusted the importance the environmental impact on the overall computation of project value.
- **Extended the time horizon** from 15 to 30 years to allow us to capture the full value of longer-term capital projects.
- **Prioritized the pilot projects** and confirmed with our client that the results made sense.
- **Planned for a roll-out** by thinking through business case submission procedures and identifying all the required reports the client would need.

3. Roll-out

Finally, strong of the client's approval of the pilot work, we rolled out the valuation and prioritization system by delivering a web-based application to the client—installed on their Intranet. Next, our team:

- **Trained about 50 planners** in a one-day workshop to empower them to submit business cases for projects they were proposing, following the valuation template we had created in Step 1 and validated in Step 2.
- **Assisted portfolio managers** in implementing a workflow process to analyze and review the data for hundreds of projects, prioritize portfolios for each commodity, and interpret the results for budgeting purposes.
- **"Trained the trainer"** and empowered the client to take full ownership of this system, offering support as needed.

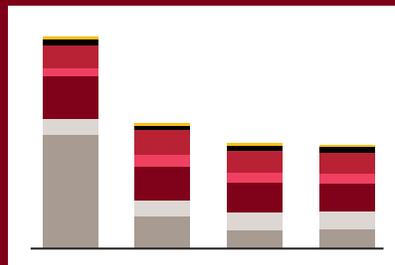
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Our approach, at a glance

Framing



Pilot



Roll-out



The impact on our client

The staged approach worked well for our client. By spending some time upfront framing the problem, we ensured the important issues were captured and also fostered internal buy-in for our process, since we were able to capture a lot of the company's know-how and idiosyncratic way of thinking about certain sources of benefit.

The pilot stage further solidified buy-in, as our client became comfortable that this approach was going to be scalable when rolled out to hundreds of projects. The final web-based deliverable was so easy to use that we barely received any technical support call from our client: they appreciated how intuitive and easy-to-use the prioritization tool was.

As a result of our work, our client had the tools that enabled them to:

- Compare very disparate capital and maintenance projects on an “apples-to-apples” basis, regardless of the kind of benefits each project would provide,
- Empower project managers to submit business cases; project managers were both encouraged to create as many new project ideas as they wanted, and forced to do so in a standardized way via the template we provided our client,

- Minimize gaming by having a systematic, defensible, and auditable system to choose which projects to prioritize,
- Rationalize budgeting decisions that were mindful not just of the immediate budget, but of a five-year budget plan, thereby ensuring that our client was not committing itself today to projects that might blow the budget in future years,
- Obtain visibility in the portfolio, by understanding when and where value was coming from, what level of investment were required to obtain this value, what risk exposure this portfolio implied,
- Generate multiple “slice-and-dice” reports (by commodity, by capital vs. maintenance types, by district, etc.) for various business units to effectively communicate the outcome of the budgeting process,
- Provide adequate priority to foundational projects, even though, on a benefit-to-cost basis, they did not score very well: by enabling other projects in the portfolio, they were naturally given a higher priority,
- Establish standardized procedures to support budgeting decisions that they could communicate to their regulators and stakeholders,

- Demonstrate to rate-payers that they were making the most efficient use possible of their monies, document and create an audit trail for all the inputs that went into the process,
- Identify gaps in the portfolio composition, and stimulate the submission of new initiatives based on missed opportunities.

Our client has been using this method for four years in a row, and made it an integral part of their capital budgeting process.

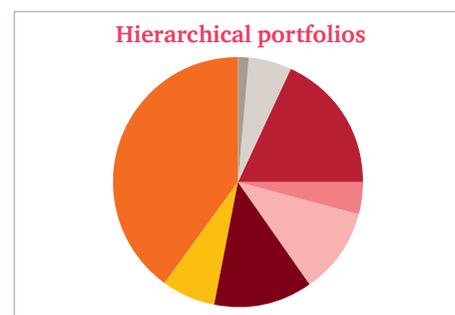
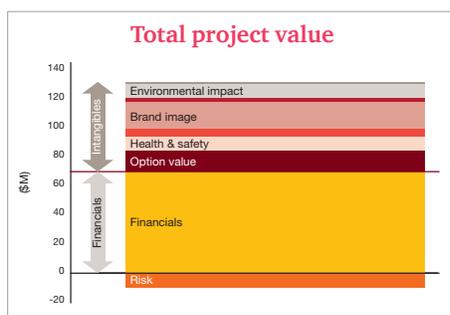
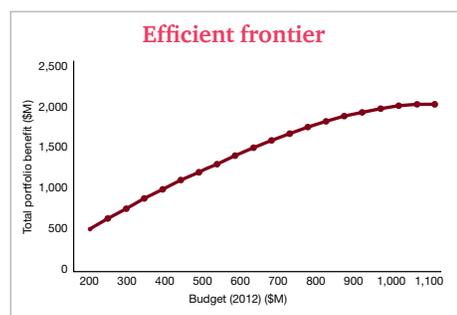
For more information

To have a deeper conversation about how this subject may affect your business, please contact the author:

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Sample PPO dashboards



About Project Portfolio Optimization (PPO)

PPO can help improve your organization's approach to capital deployment. PPO uses state-of-the-art tools and methodologies to quantify the potential cost, benefits and risks of projects you are considering or have underway. The result is a systematic way of assessing and defending capital deployment decisions.