

PITFALLS AND GAPS IN STRATEGIC PROJECT ANALYSIS

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125,058	154,568	95,054	124,500
125,487	56,845	97,511	125,000
124,000	110,000	99,011	154,000
	150,000	99,216	95,000
	25,000	101,090	154,200
		101,684	110,000
			89,000
			50,000

AGENDA

What is strategic project analysis?

Traditional cost-benefit analysis

Welfare economics and evaluation

Stakeholders

Perspective, bias, and ethics

Sustainability

Scenarios

Critical questioning

Questions?



WHAT IS STRATEGIC PROJECT ANALYSIS?

STRATEGIC PROJECT ANALYSIS



Strategic project analysis is a methodology for determining the profitability of a potential investment.



May be performed ex-ante or ex-post.



It is entirely possible for a scenario to be selected where costs exceed benefits.

APPLICATIONS



Selecting and justifying investment in a capital project



Deciding whether to repair or replace a piece of machinery



Prioritizing and selecting from a list of social initiative scenarios



Prioritizing projects competing for investment from the same funding source

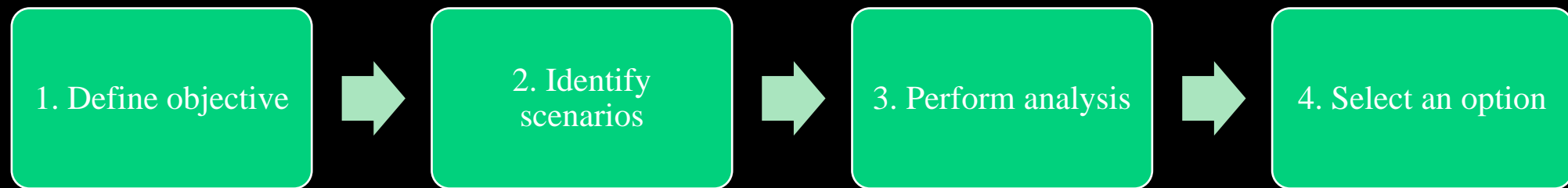


Developing government policy



TRADITIONAL COST BENEFIT ANALYSIS

ANALYSIS PROCESS



TRADITIONAL ECONOMIC CBA

- State the objective
- Define the scope of the analysis to be performed.
 - In theory, the analysis should be all-inclusive, evaluating all known costs., benefits, and disbenefits.
 - In reality, this is not practical. Every CBA is necessarily reductionist.
 - Select the duration of the project
 - Identify the impact area
- Identify scenarios
- Perform analysis
 - Identify costs, benefits, and disbenefits
 - Quantify everything
 - Reduce everything to present value
 - Calculate net present value, $NPV = (\text{Benefits} - \text{Disbenefits} - \text{Costs}) > 0$
 - Conduct sensitivity testing
- Select an option

TYPICAL CALCULATIONS

Return on investment

- Total profit divided by total cost

Net present value

- Inputs minus outputs

Internal rate of return

- How much the project earns per time period

Breakeven point

- Financial point at which a scenario has recovered its initial investment

Lifecycle cost

- Cost analysis that includes maintenance and operations, through to decommissioning



WELFARE ECONOMICS AND EVALUATION



WELFARE ECONOMICS

Welfare economics developed and evolved to evaluate the impact of programs and projects designed to solve specific social problems and contribute to the “greater public good”.

When selecting between scenarios for a particular intervention, the state of the affected population is appraised both with and without the proposed intervention, measuring the anticipated incremental effect of the initiative on peoples’ lives.

Applied by governments around the world, intergovernmental organizations (IGOs) such as the United Nations (UN), related agencies (such as the World Health Organization, UNICEF, and UNESCO), and non-governmental organizations (NGOs) such as the International Red Cross.

EVALUATION PRACTICE

- Same steps as a CBA, sometimes called a BCA
- Scenarios might not have the same objective
- Perform analysis (often ex-post)
 - Quantify if possible
 - Calculate $(\text{Net Benefits} / \text{Costs}) > 1$
 - Apply qualitative methods for nonquantifiable items
- Select an option

QUALITATIVE AND MIXED METHODS

Cost effectiveness analysis

- $(\text{Benefits} - \text{Cost})$ divided by a measure of effectiveness E

Maximin analysis

- Identifies the worst possible outcome for each scenario and chooses the least worst

Objectives-based impact evaluation

Value for money

Triple bottom line CBA

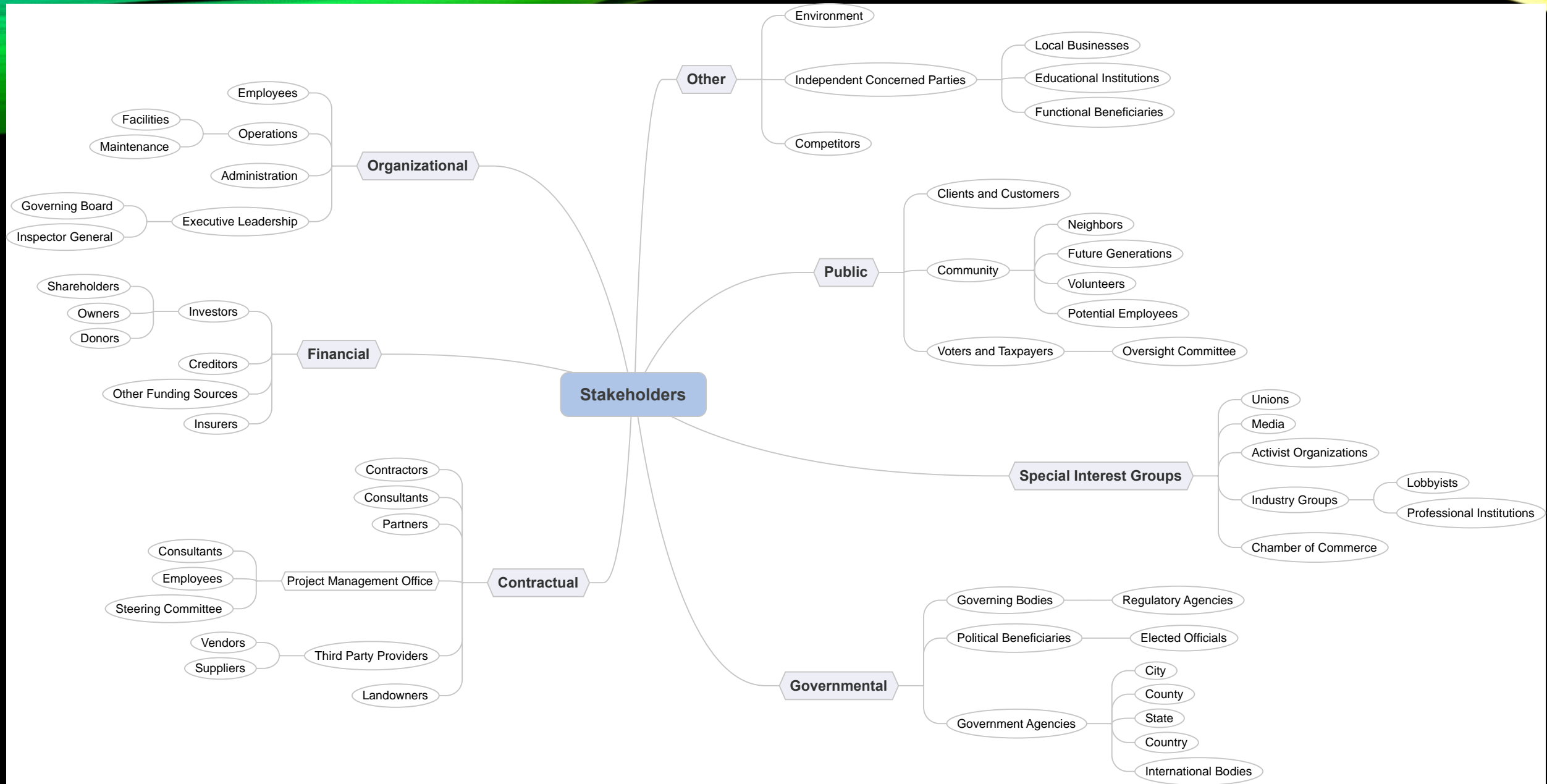
Social return on investment

The background features a complex network of dark grey nodes connected by thin lines, set against a dark blue-grey gradient. At the bottom, there are three overlapping, wavy, semi-transparent shapes in shades of green, yellow, and orange. The word "STAKEHOLDERS" is centered in white, uppercase, sans-serif font.

STAKEHOLDERS

STAKEHOLDERS

- Stakeholder standing is achieved if benefits, disbenefits, or costs might accrue to the person. Standing indicates whose costs and benefits will be explicitly included in the analysis.
- Scope of strategic project analysis is typically limited to the impact area of (territory affected by) the proposed project and stakeholder beneficiaries within that area.
 - Using geographic area to determine stakeholder standing is one way of maintaining objectivity.
 - If an understanding of potential distributional effects and equity is desired, an impact assessment study may need to be conducted.





PERSPECTIVE, BIAS, AND ETHICS

PERSPECTIVE



Perspective can significantly influence analysis results.



The outcome of any analysis is wholly dependent on its perspective.

Investor perspective focuses on maximizing profit

Spenders (those who are delivering necessary services) vs. Guardians (the funding agency)

Owner vs. operator



Perspective may also differ depending on who is performing the analysis.

BIAS

Bias can significantly influence analysis results.

Bias can be described as conscious or subconscious prejudice in favor of or against a scenario, which may result in a lack of objectivity and illogical or irrational choices.

There are over 150 types of cognitive bias, some of which are particularly pervasive in strategic decision-making.

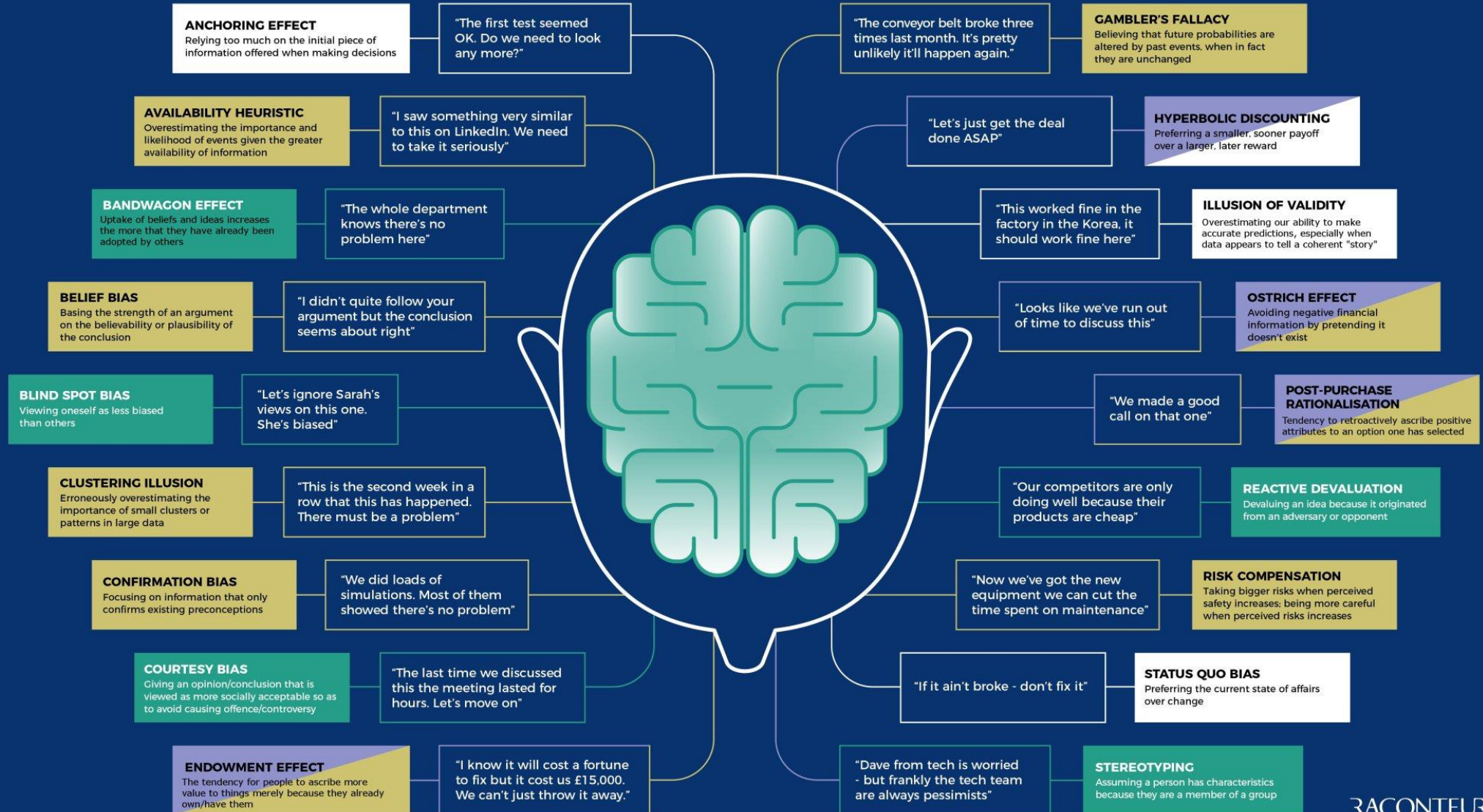
Cognitive bias

● Social ● Financial ● Failure to estimate ● Short-termism

When it comes to assessing risk, humans often fail to make rational decisions because our brains take mental shortcuts that prevent us making the correct choice. Since the 1960s behavioural scientists and psychologists have been researching these failings, and have identified and labelled dozens of them. Here are some that can cause havoc when it comes to assessing risks in business

ORIGIN

The notion of cognitive biases was first introduced by psychologists Amos Tversky and Daniel Kahneman in the early-1970s. Their research paper, 'Judgment Under Uncertainty: Heuristics and Biases', in the Science journal has provided the basis of almost all current theories of decision-making and heuristics. Professor Kahneman was awarded a Nobel Prize in 2002 after further developing the ideas and applying them to economics.



ETHICS



The action of determining stakeholders' standing is an ethical question.



Trade-offs between scenarios may even pose an ethical dilemma in which unpleasant choices and complex judgments are made.



Every step in the strategic project analysis process has an ethical component.



SUSTAINABILITY

SUSTAINABILITY

The United Nations 2030 Agenda for Sustainable Development is perhaps the most widely recognized guide to sustainability, comprised of seventeen (17) Sustainable Development Goals (SDG).

1. End poverty in all its forms everywhere.
2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.
3. Ensure healthy lives and promote well-being for all at all ages.
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
5. Achieve gender equality and empower all women and girls.
6. Ensure availability and sustainable management of water and sanitation for all.
7. Ensure access to affordable, reliable, sustainable and modern energy for all.
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

SUSTAINABILITY

9. Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.
10. Reduce income inequality within and among countries.
11. Make cities and human settlements inclusive, safe, resilient, and sustainable.
12. Ensure sustainable consumption and production patterns.
13. Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy.
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

RESILIENCE

Resilience is defined by The Rockefeller Foundation as “the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow, no matter what kinds of chronic stresses and acute shocks they experience.”

1. Minimal human vulnerability
2. Diverse livelihoods and employment
3. Effective safeguards to human health and life
4. Collective identity and community support
5. Comprehensive security and rule of law
6. Sustainable economy
7. Reduced exposure and fragility
8. Effective provision of critical services
9. Reliable mobility and communications
10. Effective leadership and management
11. Empowered stakeholders
12. Integrated development and planning



SCENARIOS

SCENARIOS - CONSTRUCTION



Construction (merit goods) –
education, healthcare, housing, utilities

Focus on capacity building.
Very good at identifying costs, benefits, and disbenefits.
Published methods and historic data for shadow pricing.



Construction (public goods) –
transportation infrastructure

Focus on jobs, social procurement, human capacity
building, and environmental benefits.
Separate economic impact analysis



Construction (commercial,
manufacturing)

Environmental impact analysis required, may pursue
green building certification.
Focus on jobs and economic impact if pursuing local
subsidies.

OTHER SCENARIOS

- Sporting events (public goods)
 - Economic impact (sport tourism, visitor spending), jobs, event revenue, future use of facilities.
 - Difficult to quantify volunteer value, intangibles (image, goodwill).
- Science, research, and technology (public goods)
 - Formerly justified as military and national security investments.
 - Benefits will never exceed the initial cost.
 - Current justification is knowledge as a public good, pure scientific interest.
 - Focus is on research output (publications), broader impacts (STEM, human capacity building, media), jobs.
 - Extreme long-term scope, generational impact, no competitive market.
 - Very difficult to quantify initial costs, non-use and intangible benefits (future knowledge & surprise outcomes, technology spillover, science diplomacy).
- Policymaking
 - 80% of US Environmental Protection Agency (EPA) CBAs over a thirteen (13) year period excluded benefits considered important, significant, or substantial to the analysis due to data limitations and an inability to perform meaningful quantification and calculation of those benefits.



CRITICAL QUESTIONING

CONTEXT



What is the funding source for the analysis?



What is the perspective from which the analysis was conducted?



What is the analysis objective?



What is the expected audience for and use of the report?



What is the expected use of the report?

CONTENT

1. Is determination of stakeholder standing clearly explained and justified?
2. Is the selection of the **discount rate** clearly explained and justified?
3. What is the **timeframe** in which costs and benefits are analyzed? How is it justified?
4. Is there any **weighting** applied to scoring? How is it justified?
5. Does the report identify its data sources?
6. Does the report clearly explain the methodologies used for quantification?
7. Was a sensitivity analysis conducted? How does the report reconcile or acknowledge it?
8. How was scenario ranking conducted? Is the methodology clearly explained and justified?
9. How clear is the logic, justification, soundness, and relevance of the analysis and conclusions?
10. Does the report identify any **unquantified benefits**? How are they treated?
11. Are **assumptions and omissions** identified? Are they clearly explained and justified?
12. Are implications and consequences identified? Are they clearly explained and justified?
13. Is any bias evident?
14. Is any clarification needed?
15. Is there any lack of evidence?

QUESTIONS?

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New book coming soon !!

Strategic Project Analysis: A Powerful Set of Cost-Benefit Tools and Techniques for Managers