



Treasury Board of Canada
Secretariat

Secrétariat du Conseil du Trésor
du Canada

Canada

Challenges for Cost Estimators: The Decision-Making Process

Are We Enabling Better Decision-Making?

Michael Lionais, Executive Director
Costing Centre of Expertise, Office of the Comptroller General
Treasury Board Secretariat
Ottawa, Ontario

Canada In-Brief

- Canada means village in Huron
- Cabot's journey from Bristol to Canada took about 35 days
- Population: 36.2 million (fewer people than Tokyo's metropolitan area)
- 2nd largest country in the world with the longest coastline
- More lakes than the rest of the world's lakes combined, containing 20% of the world's fresh water
- 3rd largest oil reserves in the world
- Ranked 10th in GDP in 2015 (about half the UK's GDP) and ranked 8th in income per capita in 2012 (UK was 13th in the study)
- Constitutional monarchy with a Westminster parliamentary system



INCLUSIVE AND
SUSTAINABLE ECONOMIC
GROWTH



SOCIAL INCLUSION AND
DIVERSITY



OPEN AND TRANSPARENT
GOVERNMENT



SAFE CANADA



GOVERNMENT HAS MADE IMPORTANT COMMITMENTS TO CANADIANS

A COMPREHENSIVE AND AMBITIOUS PLAN

Treasury Board is to lead the government's efforts to ensure that departments and other federal organizations are able to use the best available information. Responsible governments rely on sound evidence to make decisions to ensure we obtain good value for our money.

Mandate Letter – President, Treasury Board

Part 1: Cost Estimating



Major Crown Project Costs are Understated

- Budgets for major Crown projects generally increase with time
- In setting budgets, Cabinet is presented with a cost that includes contingency, but best and worst cases are not formally presented
- When Cabinet approves a single number, the only thing for certain is that the number will change



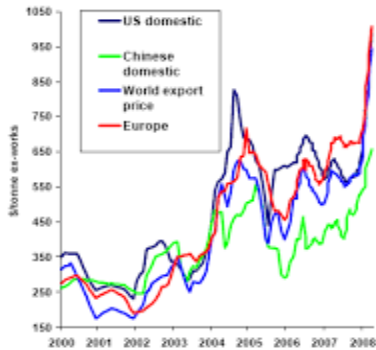
Decisions are being made with a limited understanding of the financial impact of program risks

Understanding Financial Risk

- A lack of contextual information often hinders decision-maker's ability to fully understand the financial risks associated with a project

Cost estimates are subject to change based on a number of factors including: scope, framing assumptions, fluctuations in key input costs over time, implementation schedule, etc.

Steel prices break through the \$1,000 barrier



Source: Steel Benchmarker, Macquarie Research, April 2008

Presenting cost estimates as a single value does not provide sufficient contextual information to support evidence-based decision-making



Decision-makers and Canadians are often surprised when updated costs vary significantly from earlier estimates

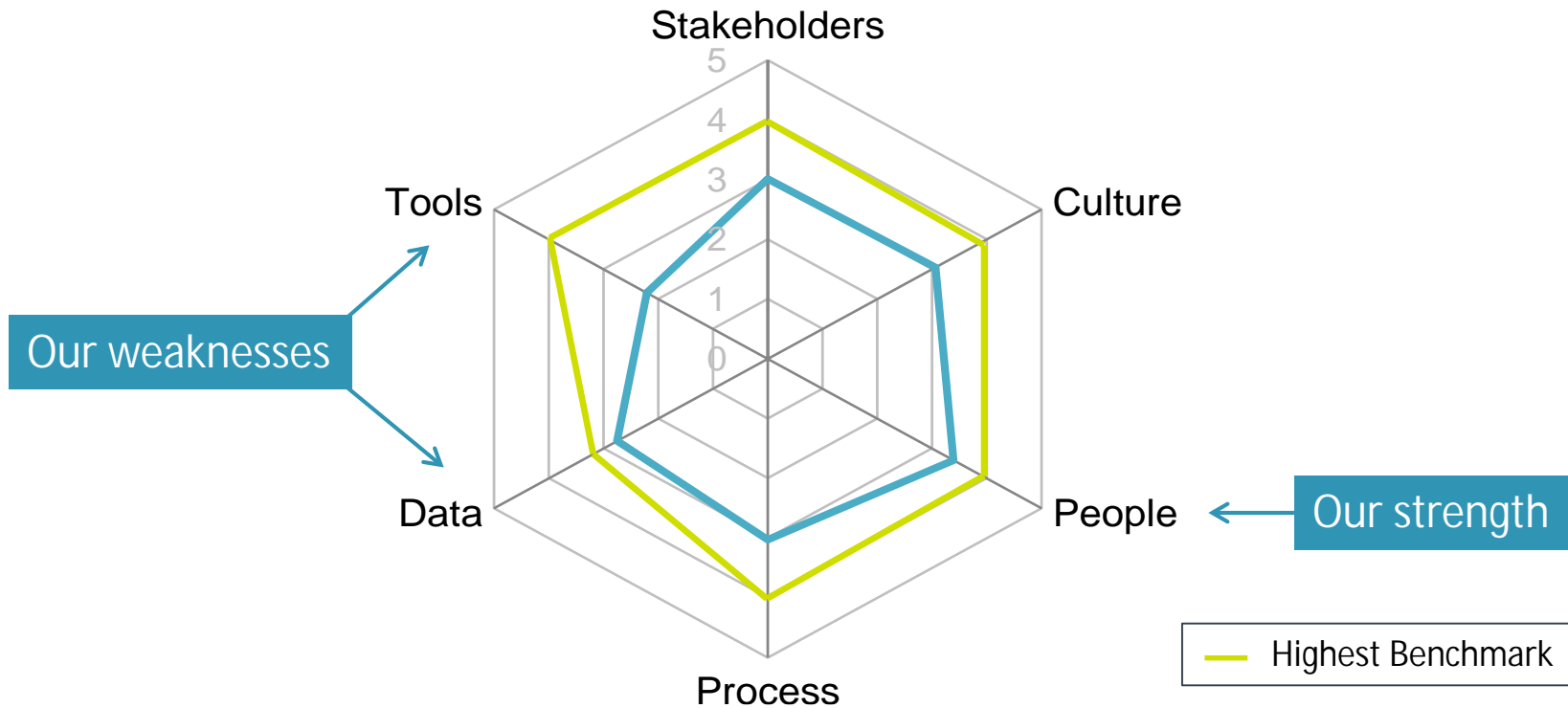
Costing Centre of Expertise

- Mandated to **increase the robustness of cost estimates** presented to Cabinet for consideration
- Initially focused on reviewing cost estimates as they were submitted to Cabinet
 - 2/3 of submissions had issues
- Learned that we needed to look outwards and professionalize the cost estimating community across the Government of Canada



Our Evolution Begins...

- Completed an evidence-based gap assessment:
Where We Are vs. Where We Want to Be



Developing a multi-year plan to close gaps and improve overall results with benchmarks

Part 2: The Science of Decision-Making



The Brain: How Are Decisions Made?



General belief is that decisions are made subsequent to deliberation/consideration of all information – including cost

The Brain: How Are Decisions Made?



Research shows that decisions are made on the basis of
EMOTIONS

How Emotions Affect Decision-Making

- Working through the pros and cons of various options can be overwhelming
- Emotions are designed to appraise and summarize an experience and inform actions
- Emotional reactions can:
 - Direct our attention and energy toward the most relevant aspects of a proposal, from our own perspective;
 - × Lead to misguided/poor decisions



Without an emotional trigger, no one makes a decision.

Ideas

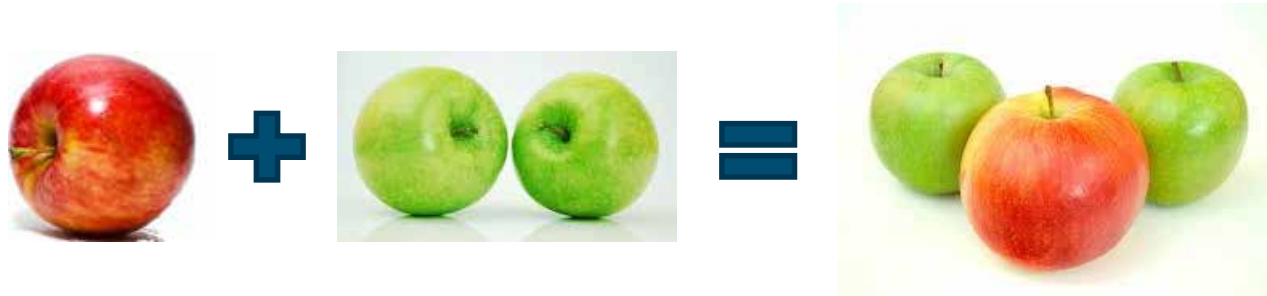
- Ideas are often discussed before official presentations and in-depth analysis take place
 - This is often the stage where either positive or negative emotions are attached to an idea and a decision is made...
- Can cost estimates be part of the decision-making process and be associated with positive emotions?



While emotions drive decisions, our success may hinge on our ability to understand and interpret them

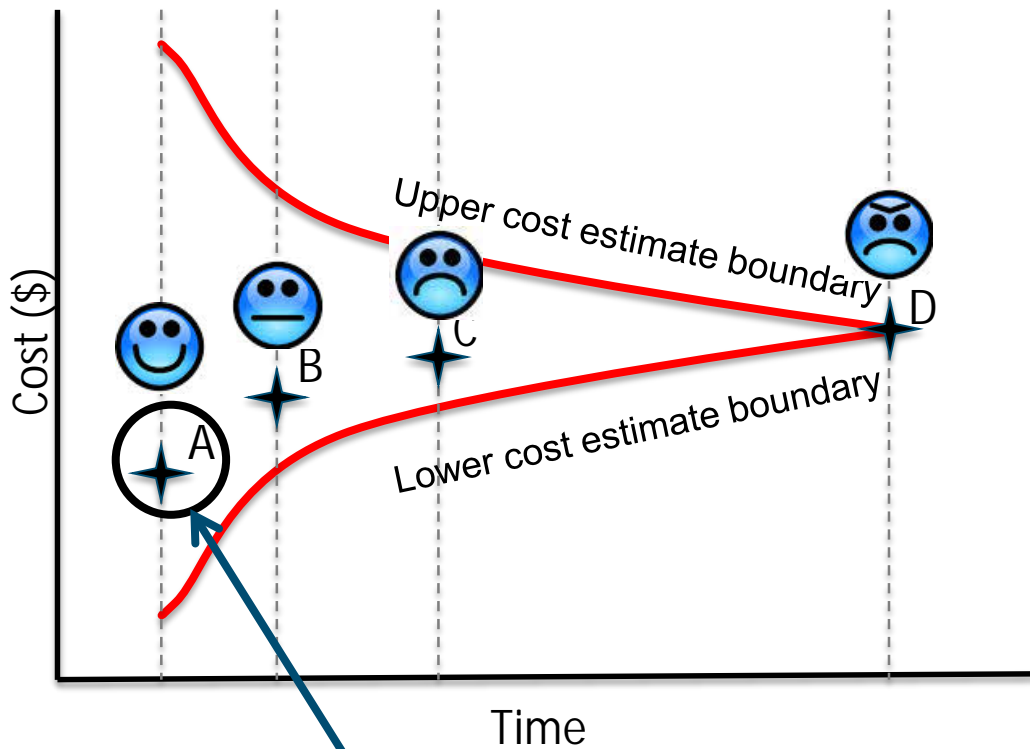
Creating Understanding

- The human brain thinks in terms of images – not numbers



- How do cost estimators (and other finance professionals) present information in a neutral or positive way in order to increase their contribution to the decision-making process?

Analyzing the Evidence



50 to 90% chance early cost estimates will be exceeded*

* Peter R Garvey, Brian Flynn, Peter Braxton & Richard Lee (2012), "Enhanced Scenario Based Method for Cost Risk Analysis: Theory, Application and Implementation", Journal of Cost Analysis and Parametric s, 5:2, pg 114

Perceptions of Financial Professionals

- Decision-makers often view financial professionals as:
 - Inward focused
 - Rule-bound
 - The centre for control versus the centre for guidance
 - Process oriented versus results-oriented
 - Adding overhead costs to program management

Perception: Focus only on the negative aspects of a proposal

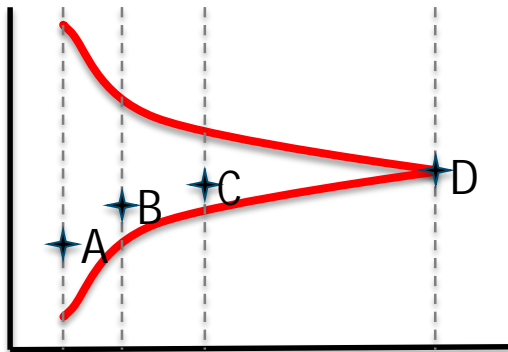


Discussion of Ideas



Positive emotions

Cost Estimator's Input (Reality Check)



Negative emotions

Building Knowledge



Mantra: "Let the evidence speak for itself."

Building Knowledge



Are we transforming the evidence into knowledge when negative emotions are being evoked?

People Seek Positive Emotions



Positive Emotion



Action



Negative Emotion



Inaction

A Commitment Has Been Made



Increase the Budget



Negative Emotion



Accept the Risk



Inaction

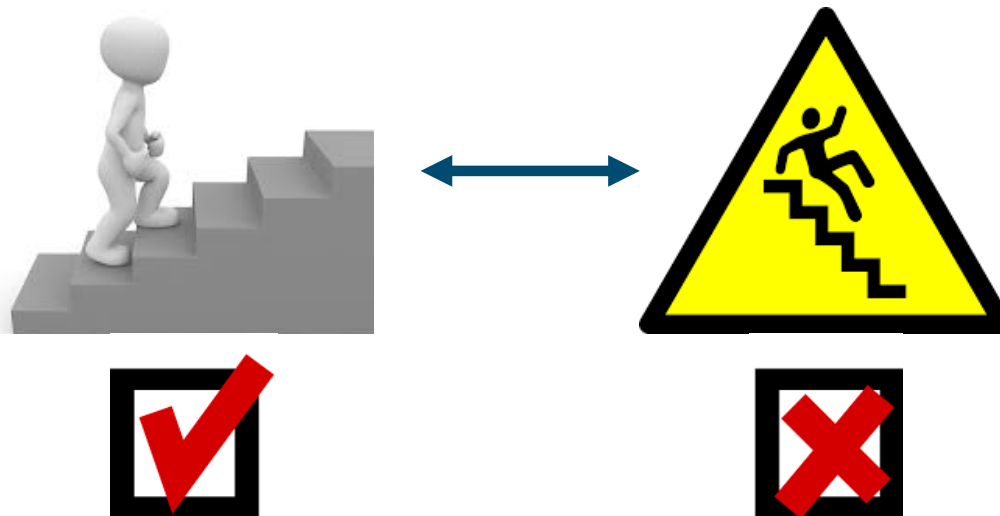
The Communications Challenge

- Why will decision-makers choose to accept a risk (inaction) rather than incur a negative emotion (increase the budget)?
 - People are intrinsically optimistic
 - Information overload – people will focus on the elements of the proposal that support their idea/belief
 - The long-term nature of complex decisions means that most decision-makers are not around for the results



The Communications Challenge

- Decision-makers link numbers to personal experiences and/or images to generate insights
 - We need to help them to create the right images – positive emotions



The Question

In disclosing the financial risk of a proposal, are we creating a negative reaction which will cause decision-makers to take excessive risk?

