Evolution of the rigor of decision-making in capital planning

Session: Overview of the Asset Management standardization and regulatory environment - Certification experience

Ir. Boudewijn Neijens, Copperleaf, Canada
Agenda

- Introduction
- What is “value”
- How to express value
- A value framework
- Building a framework
- Conclusions
Asset Decision-making

- Failure
- Interval
- Condition
- Risk
- Value
What is “Value”? 

- Asset Management is the “coordinated activity of an organization to realize value from assets”
- Value can be tangible or intangible; positive or negative
  - Value determination of the asset = future income generation potential of the asset, its depreciated replacement cost or the market value of the asset as if it were to be sold
  - Value generation from assets = benefit derived from their operation or use
  - Not to be confused with the organization’s values
Value is Important Because...

- Optimal decision-making requires a way to compare competing projects or options
- You can only manage what you can measure
- Stakeholders want to quantify (and verify) outcomes
## The Value of a Car

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>You</td>
<td>Speed, looks, technology</td>
</tr>
<tr>
<td>Spouse</td>
<td>Comfort, convenience, affordability</td>
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<tr>
<td>Children</td>
<td>Entertainment, space</td>
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<tr>
<td>Insurer</td>
<td>Safety, repair costs</td>
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<tr>
<td>Banker</td>
<td>Resale value</td>
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<tr>
<td>Friends</td>
<td>Image, price</td>
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• Different values need not be weighted equally
Aligned Objectives

- Everybody must understand and work towards the organizational objectives
- A value framework can facilitate and capture the alignment of all stakeholders
- Use value metrics to connect actions to objectives
The Need for Aligned Objectives

What to do
Planning
- Modeling
  - Sustainment
  - Growth
  - Network

How to do it
Engineering
- Analysis
  - Feasibility
  - Requirements
  - Options

When to do it
General Manager
- Decisions
  - Objectives
  - Constraints
  - Bottom line

Do it
Service Provider
- Execution
  - Scheduling
  - Resources
  - Costs
What is “Value”?

- Risk Mitigation
- Shareholder Value
- Sustainment
- Compliance
- Efficiency
- OPEX Reductions
What is “Value”? 
The Triple Bottom Line

From: https://sustainabledevelopment.un.org/
How to Express Value

- Railways, utilities, etc. have many stakeholders
  - Will often need a multi-criteria representation of value
- Value monetization allows for simpler math
  - Cost = negative value
  - Risk = potential value (destruction)
  - Performance = value creation
## Value and Options

<table>
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![Car images](image-url)
Value-based Decision-making

IDENTIFY
the criteria that deliver the greatest value to the organization

ALIGN
criteria to a common scale to compare dissimilar investments (i.e. financial and non-financial)

ASSESS
the value of investments using a rational economic approach

OPTIMIZE
investments across the organization based on value and constraints
Reconciling Risk and Value
Building a Value Framework

1. Educate stakeholders on VDM
2. Review corporate objectives and risk framework
3. Develop the value framework

4. Establish a unified value framework
5. Executive & stakeholder sign-off
6. Maintain & improve the VDM process

**IDENTIFICATION:**
1. Identify value measures aligned to corporate objectives
2. Use Copperleaf Value Framework library to develop value models

**DEFINITION:**
3. Establish the risk, service measure & benefits frameworks
4. Calibrate the value measures against a common scale

**VALIDATION:**
5. Validate the value framework
6. Review & finalize the value framework

www.railway-asset-management.org
Asset Investment Planning & Management

ASSET LIFECYCLE STRATEGY (<~20 YRS)

INVESTMENT PLAN (<~5 YRS)

BUDGETING (<~2 YRS)

OPERATING (IN FLIGHT)

PREDICT

ASSET RISK UPDATES

CANDIDATE INVESTMENTS

EXPANSION / GROWTH OPERATIONAL IMPROVEMENTS

ASSESS VALUE

OPTIMIZE

MANAGE

OPERATING UPDATES

MANAGE

MANAGE
Summary

- Understand both the “value of” and the “value from” your assets
- Monetization is gaining momentum
- Both internal and external stakeholders might have very different perceptions of value
- Value and risk are complementary
- A Value Framework is necessary for rigorous decision-making
  - Represents all stakeholders
  - Enforces the alignment to Strategic Objectives
  - Must be validated and systematically used
  - Needs revisiting regularly as part of the Asset Management System PDCA
Thank you for your attention

Ir. Boudewijn Neijens
BNeijens@copperleaf.com
+1 604 6399700