**Which Average To Use?**

**Passing Along Social Security**

Michael wires transfers that the typical American family will be handing down Social Security entitlements to their children as an inheritance. Using the same federal Reserve data in the report, the median net worth of couples aged 65 to 74 in 2004 was $155,000, including housing equity. By definition of the term median, this value is far more representative of the typical American family than the average net worth of $111,000 he quotes—which is skewed higher by the wealth of 10% of families. That realization, combined with the large decline in net worth for most Americans in 2008, considerably weakens his premise.  

James Strachan, President, Mass.

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**PSU Problem Solving Process**

1. Position
2. Sense
3. Uncover
4. Solve
5. Build
6. Achieve

Refine the Problem & Developing Alternative Solutions
PSU Problem Solving Process

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Avoid Analysis Paralysis

- After all this analysis – what now?
  1) An obvious solution, or…
  2) Some creative alternatives
- So, if 2.) – How do you decide?
  - Intuition and gut feel helps, but…
  - Force yourself to be objective

Do a few Checks First

- Make sure the solutions still match the problem
- Make sure the solutions are still consistent with mission, vision and values
- Check for impact on the key stakeholders
Think About Risk

- Your risk propensity relative to gain will affect personal decision making:
  - Final seconds of game with rival, coach must choose a play with a.) 95% chance of a tie score or b.) 30% chance of victory
  - College senior with talent must choose a.) medical school (80% chance of success) or b.) acting (20% chance of success)

Objective Decision-making Tools

- Use objective criteria and rational methods
  - A ranking matrix with criteria
  - Screening tables
  - Pros and cons
  - Pass/Fail on criteria
  - Have a What-If? meeting

Decision Making Example

- Should I buy a new heat pump or repair the old one?
  - Issues:
    - The old heat pump was installed in 2000 – clearly a lemon!
    - New heat pumps are far more efficient than the old ones.
    - New heat pumps use Puron as coolant.
    - Natural gas is not available in my neighborhood.
    - Unknown long term maintenance costs on old heat pump.
Decision Criteria

- Short term financial impact.
- Long term financial impact.
- Energy efficiency.
- Peace of mind!
- Air filtration capability.

Ranking Matrix

- Give a weight to each of the criteria
  - Total of weights must add to 1
- Rank each solution in terms of how well it satisfies the criteria
  - From 1 to 10
- Multiply the weights by the ranks for each option and add them up
- Higher score wins

Screening Table

- Judge alternatives as satisfactory or not – choosing a camera

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>MPixels</th>
<th>Price($)</th>
<th>Memory</th>
<th>Zoom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sony</td>
<td>12</td>
<td>$299</td>
<td>8G</td>
<td>4x</td>
</tr>
<tr>
<td>Nikon</td>
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<tr>
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<td>8x</td>
</tr>
<tr>
<td>Constraints</td>
<td>&gt;8</td>
<td>&lt;$350</td>
<td>&gt;4</td>
<td>&gt;=3x</td>
</tr>
</tbody>
</table>

Pros And Cons

- List the pros
  - Score them on a +1 to +10 scale
- List the cons
  - Score them on a -1 to -10 scales
- Add them up
  - Positive is good, or look for a difference in the scores for multiple options
Decision Making In Turbulent Times

- Don’t go it alone, involve others, share info
- Learn, don’t punish
- Know when to bail
- Practice the five “WHYS”
- Engage in rigorous debate

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Evaluate the Alternatives and Choose the Best Solution