



Value-Based Budgeting

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In the two previous IG Newsletters, I argue that local governments need to adopt best-practice methods for prioritizing projects. The method I advocate is known technically as multi-attribute utility analysis (MUA). Using MUA, tools can be developed that allow local governments to optimize their portfolios of projects and other investments. The methods can also allow government officials to demonstrate that the services they provide are worth the taxes, fees, and other costs imposed on their citizens.

In this article, I describe the key feature of MUA—its focus on making decisions driven by the values of its citizens. In my opinion, local governments would benefit greatly from tools that permit value-based budgeting.

Typical Decision-Making Processes

Currently, most local governments make decisions the way most individuals make decisions. The process starts when a need is identified. For example, the birth of a child may create a need for a family to have a bigger home. The family identifies some houses on the market that are the right size and within their budget. Then, they screen out choices that are unacceptable. Finally, from the remaining options, the family chooses the one that they like the best. The evaluation criteria are not clearly articulated, and the evaluation process is ad hoc. The purchased house is acceptable, but it may not create the best result for the family.

Similarly, in a local government, a fire in a multi-story, downtown building may cause the fire chief to express a need for an aerial ladder fire truck. Such trucks can cost \$700,000 or more. The chief reviews some options, picks one, and requests consideration for funding out of the city's upcoming capital budget. The decision is important (the truck is expensive and, if it is inappropriate in any way, the city may need to live

with the mistake for a long time). Nevertheless, the decision process is informal and depends critically on the personal experience and judgment of the fire chief.

Of course, the fire chief's request for a new fire truck does not by itself resolve the problem. The fire truck becomes one of many needs that drive capital budgeting decisions. The processes used by local officials to decide which requests to fund are, likewise, mostly informal and rely heavily on experience-based judgment (see John Vogt's book, "Capital Budgeting and Finance: A Guide for Local Governments"). However, in this case the responsible officials may not have the fire chief's detailed technical information and expertise for understanding the importance of the fire truck in addressing the city's fire-protection needs. For what fraction of the city's fires would the ladder truck provide the best response? Is the truck sufficiently maneuverable to access critical downtown buildings?

Furthermore, responsible decision makers may have difficulty comparing the fire truck with competing funding requests proposed to address other needs. If only one option can be afforded, should the fire truck be funded or a proposal to upgrade a congested city intersection? Even if the officials responsible for budget decisions happen to be technical experts in some areas, it is unlikely that they are experts in all of the subjects potentially addressed by the proposed budget. Again, an informal decision-making process may not produce the best results for the community.

Alternative-Focused Thinking

Ralph Keeney, one of the developers of MUA, characterizes the decision-making processes described above as "alternative-focused thinking"—decision makers first identify alternatives, and then try to choose the best of the lot. According to

Keeney, we do this out of habit. From the time we were children, decisions are posed to us as choices among specified alternatives. Would you rather wear your red pajamas or your green ones? Would you rather do your homework before dinner or after dinner? From the menu, would you rather order fish or steak?

Comparing alternatives without first clearly articulating objectives often leads to poor choices. One reason is that alternative-focused thinking frames the problem in a way that tends to constrain our thinking. Like a textbook math problem, it says, choose, from the following N alternatives, the one that best meets need X . This way of posing the problem discourages us from thinking outside the box. Buying another house isn't the only way to get more space. The family might be able to expand their current house by adding on another bedroom. Similarly, buying a new fire truck is not the only way for a city to improve fire protection.

Another problem with alternative-focused thinking is that it doesn't help us make choices that accomplish all of our objectives. An alternative chosen to address a specific need will often produce other consequences that we care about. Will the new house place us in a safer or less safe community? Will the new fire truck ease community concerns about inadequate fire protection? Alternative-focused thinking doesn't help us to think through all the criteria that should be considered when making a choice. The alternative we chose may produce undesirable consequences that we failed to recognize. We may miss opportunities to choose a creative alternative that not only addresses the need, but also accomplishes other objectives that are important to us.

Value-Focused Thinking

In the book "Value Focused Thinking," Keeney describes the

alternative perspective that forms the foundation of MUA. You start by defining what you want, and then figure out how best to get it. Keeney's premise is that focusing on values leads to choices that produce more desirable consequences. It also enables us to better explain and defend our decisions to others.

Keeney illustrates how value-focused thinking could help in the fire truck example. Suppose the fire chief begins by writing down the fundamental objectives of the fire department. These objectives might include protecting public health and safety, minimizing losses of property, and reducing the fears and concerns of citizens. There are numerous investments besides buying another fire truck that might be considered for better achieving these objectives. For example, building inspections could be improved to better prevent fires. Community educational programs could be instituted to educate and train people to report fires more quickly and to take more effective actions to protect their safety and the safety of others. Local fire alarm boxes might be wired to ring simultaneously in the nearest fire station and at a central dispatching center.

Explicitly defining objectives helps us to generate the broadest possible range of alternatives for achieving those objectives. We can then systematically assess the ability of each alternative to achieve each objective. In the fire truck example, such reasoning may or may not show that the fire truck is the most cost-effective option. If it does, the chief will have a stronger argument for making the case for funding. If not, a better and perhaps less costly alternative will be identified, and that option should perform better in the competition for scarce city resources. Value-based thinking leads to choices that are more likely to get you what you want, and the disciplined approach provides a logical justification for choosing the preferred option.

Creating Tools for Value-Based Budgeting

MUA quantifies the principles of value-based thinking and provides a foundation for creating practical tools for valuing and prioritizing projects. As I explained in previous articles, the federal government sponsored much of the research underlying this approach, and has applied it to support many types of decisions.

With MUA, a model is constructed to describe the values that drive the decision. To begin constructing the value model, decision objectives are identified. Then, performance measures (attributes) are defined for quantifying the degree to which objectives are achieved. Weights are specified to represent the willingness to trade-off the objectives. The value model provides a way of quantifying the value of alternative projects that might be conducted. Building a value model takes skill, and a trained facilitator is needed to ensure that objectives are appropriately defined and the model is well-structured.

Building Consensus

If experience at the federal level is a guide, then local governments could derive important benefits from using formal tools for prioritizing projects. One such benefit would be increased stakeholder consensus over spending decisions.

Consensus occurs when stakeholders participate in developing the tool. Involving stakeholders works well because the approach effectively separates the two types of judgments that are required for choosing projects—value judgments and technical or factual judgments. Value judgments, such as what objectives matter and what weights should be assigned can come from elected officials and directly from citizens. You don't need to be a technical expert to express an opinion on what you want. Technical judgments, such as what are the alternatives are available and how effective would each be at accomplishing each objective can come from technical specialists. Engaging elected officials, department managers, and

even citizens in the specification of objectives is an effective way to involve stakeholders in funding decisions. It creates understanding, confidence, and buy-in for choices that can be shown to relate directly to mutually agreed-upon objectives.

Given the many social controversies in the news today, it may seem that citizens disagree greatly over values. Actually, though, there is broad agreement over what objectives matter. Where we differ is in the weights that we assign when tradeoffs must be made. An example is provided by the debate over the provisions of the Patriot Act that in some circumstances can allow authorities to enter a private home without a judge-issued search warrant. In this context, should greater weight be placed on public safety or people's right to privacy?

In my experience, people can readily agree on the objectives that should guide decisions. If a prioritizing tool is developed based on these objectives, sensitivity analyses can be conducted to identify the projects that are the clear winners, the clear losers, and those whose funding depends on the specific weights that are assigned. People understand that public decisions must represent a compromise among the differing weights that various stakeholders would assign. Thus, weights that reflect an average of the different views expressed in the community provide a good starting point for making tough choices.

Experience shows that it is much easier to get people to agree on the rules for prioritizing projects than it is to get them to agree on specific decisions that must be made. Thus, a tool that derives priorities from the predominant values of the community and the technical estimates of recognized experts can be an effective way to build agreement over funding decisions.

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