FISCAL RESEARCH CENTER

Zero-Base Budgeting for the 21st Century
Public Administrator

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I. Introduction

Zero-Base Budgeting (ZBB) is a budget reform that swept the local, state and national scene in the 1970s. Although the reform received some positive reviews, by the mid-1980s it had been largely abandoned as too time consuming and costly. As states wrestle with significant shortfalls caused by the recent recession, Zero-Base Budgeting is once again being discussed as a strategy for cutting government budgets. While there is much discussion around ZBB, the institutional knowledge about the reform as originally conceived has largely been lost.

This report reviews the history of ZBB, how ZBB was originally implemented, and the strengths and weaknesses of the reform. Although this report discusses some of the critiques of ZBB as originally implemented, this does not mean that ZBB will necessarily experience the same shortcomings in the future. States should be able to learn from historical experience and adopt a more gradual approach to reform rather than the wholesale overhauls attempted in the past. Modern technology may also make the process and analyses easier to develop than it was in the past. Additionally, many states that are implementing “ZBB” now are actually not using ZBB as originally conceived. There is no reason that states or localities cannot re-invent the reform as they see fit; however, the original ZBB was based on an interesting analytical process that is worth understanding. States and localities may find some or all of the reform worth revisiting. The lessons learned from implementation of ZBB in the 1970s also have implications for reforms beyond ZBB itself.

The name “Zero-Base Budgeting” can generate misconceptions about the process itself. ZBB, as originally developed, does not assume that an organization starts the budget process with an absolute zero budget in an attempt to justify each individual expenditure item. A micro-managing budget process of this type would be too costly both in time and resources to employ. Instead, ZBB refers to a process in which an organization clusters related activity expenditures into decision packages, and evaluates them in light of organizational goals, anticipated revenues, and potential efficiencies. These decision-packages are then ranked against one another (Pyhrr, 1973). This process is intended to shift focus away from incremental budgeting where a department begins with a base budget requiring no justification and each year only requests incremental increases on top of this base (Davis, Dempster, & Wildavsky, 1966).
Traditional ZBB’s focus is on cost analysis. Its core analytic process focuses on the cost per unit of output produced for alternative service delivery options as well as the implications of alternative levels of funding. This analytical emphasis means that not all activities are appropriate for a traditional ZBB process—for instance, a statewide education formula grant program to local school districts may not be appropriate for ZBB consideration (Snell, 2009).
II. History of Zero-Base Budgeting

Zero-Base Budgeting was developed by Peter Pyhrr and a team of analysts in 1969 as a strategy for dealing with fiscal stresses at Texas Instruments. Using a ZBB-like procedure, the analysts identified significant resource allocation and strategic goal mismatches as well as various communication failures across business units. The process was so successful that they developed guidelines for a more comprehensive Zero-Base Budgeting process, which was rolled out to the entire company for the 1971 budget year. The new process required an annual comparison of programs and services to ensure that funds were allocated according to organizational priorities and that programs were optimally run as measured from a cost standpoint. Reviews of this effort found that the ZBB process resulted in better management of revenue volatility, improved product and process evolution, as well as improved response to outside shocks to the organization (Stonich et al., 1977).

In 1970, then Georgia Governor Jimmy Carter hired Peter Pyhrr to help Georgia implement Zero-Base Budgeting for the 1973 Fiscal Year (Bhada & Minmier, 1975). It was the first state to attempt this new budgeting process. When Governor Carter was subsequently elected President of the United States in 1976, he issued instructions to implement Zero-Base Budgeting at the federal level as well (Carter, 1977).

During the 1970’s the economy began slowing even as government programs were growing, and ZBB was seen as a way of attempting to rationally manage the size and scope of government. By 1977, at least 20 states had implemented or were implementing ZBB\textsuperscript{1} as were a host of local governments (Research Division, 1979). However, by the 1980’s, ZBB was largely abandoned due to massive paperwork and significant staffing requirements. The reform had proven too time consuming and costly to implement (Tyer & Willand, 1997), although elements of the reform continued to influence budgeting at different levels of government. For instance, Georgia retained some aspects of the system—such as presenting agency budget requests for multiple funding scenarios. The federal government discontinued ZBB during the Reagan Administration (Mosher & Stephenson Jr, 1982; Newland, 1983).

Early experiences with ZBB showed that design and implementation issues such as executive level guidance, departmental “buy-in,” upper management commitment,

\textsuperscript{1} The states included Arkansas, Colorado, Delaware, Georgia, Iowa, Kentucky, Louisiana, Ohio, Texas, California, Idaho, Illinois, Kansas, Missouri, Montana, New Jersey, Oregon, Rhode Island, South Dakota and Tennessee.
information availability, employee education, and ample lead time are major determining factors as to whether the implementation of ZBB succeeds or fails (Pyhrr, 1973; Stonich, et al., 1977). Therefore, these must be addressed at the beginning of a ZBB implementation process.
III. The ZBB Process

ZBB’s task is to aggregate and reevaluate an organization’s activities considering cost, levels of service, and alternative delivery methods within budgetary guidelines. The work is primarily grounded in analysis at the lowest levels of management, where front line managers are asked to calculate all activity related costs and suggest more efficient ways to accomplish the same activity goals, as well as to assess the implications of different funding levels for each activity.

Figure 1 shows an overview of the ZBB process. The organization is initially broken down into “decision units” headed by experienced and knowledgeable front line managers. The front line managers then aggregate individual expenditures into activity costs which become individual decision packages. Each of these packages is then considered for alternative delivery methods in order to maximize services while minimizing resource usage. Decision packages may also include multiple funding levels for each activity or each different funding level becomes a unique decision package depending on how ZBB is implemented. Finally, managers rank the decision packages in order of priority, consolidating them into a final list. Larger organizations may employ additional levels of review, but the process generally remains the same.
FIGURE 1.  ZBB AS PORTRAYED IN THE LITERATURE

Source:  Comptroller General’s Report to Congress ZBB 1979, p.3 (General 1979).
Step #1: Planning Phase

In applying Zero-Base Budgeting to a state, the process begins with an in-depth Planning Phase by the executive level of state management that has been delegated budgeting duties. This phase generally includes an assessment of the anticipated economic environment during the following budget year, revenue projections, the organization’s planned strategic response, desired program emphasis, and total expenditure targets. In addition, the budget process parameters are established including cutoff levels of funding and the number of review levels. The goal of the planning phase is to provide necessary guidance to lower level managers, giving them the parameters within which they can exercise discretionary authority. Failing to do this may result in budget recommendations from lower levels of management that are politically or economically infeasible to implement. The planning phase may also need to include guidance on how to approach strategic reorganizations based upon information obtained through the ZBB analysis. For instance, during its first attempt at implementing ZBB, the State of Georgia found that “seven different agencies had responsibility for the education of deaf children” (Minmier & Hermanson, 1976). All of this information should be combined into upper management’s communication of goals and objectives for the following budget year, which in turn is distributed to all departments and decision units as a general guideline for the Zero-Base Budget process.

Step #2: Agencies Divided into Decision Units

As the planning phase proceeds, departments are broken down into decision units, the basic working unit of a ZBB analysis. In a larger organization such as a state, this task of assigning decision units would be done by a department head having detailed knowledge of the subunit. This can be done in parallel with the planning phase, but if reorganization is being contemplated by the executive level, these decision units may require further adjustments.

Decision units are separate groupings of activities which may be delineated by cost center, project, service area, political division or any other logical breakdown. Mission and Program statements may help to provide clues regarding possible ways to dissect an agency into decision units. At a municipal level, a Department of Parks, Recreation and Senior Services might be broken down into six decision units: Senior Services, Veterans Services,
Agricultural Extension Services, Parks, Beaches, and Grants. Each of these contains a variety of activities within a focused program area. A decision unit, such as Parks, may be further sub-divided into political regions in order to consider program size and total funding between representative districts.

Decision units should not be created too large or the evaluation process will be too cumbersome for analysis and ranking by the front line manager. They also should not be created too small or the analysis and comparison will be too limited and constrained (Stonich, et al., 1977).

Department heads should designate a front line manager in each decision unit as the decision unit evaluator, “capable of making meaningful decisions for the organization” (Barnett, 1982). The analysis that they will perform is the core activity of the ZBB process. Accurate information and service delivery alternatives must be generated at this level in order for the process to be effective. Based upon Georgia’s implementation experience in the 1970s, management needs to be sure that these employees are trained effectively in performing the analysis, provided with the cost and activity information needed, and delegated the required authority necessary to make recommendations that follow (Pyhrr, 1973).

**Step #3: Defining Decision Packages**

The decision unit begins the process by identifying all decision unit activities, resource needs and outcomes under their current budget. Those activities identified as having a clear cost for services relationship are eligible for ZBB evaluation and ranking. Since the goal is to maximize services provided while minimizing the use of resources, a comparison of activities and alternative delivery methods can only be done on a cost for services basis. This generally includes most activities in a government organization where nearly all activities have a cost for services delivered calculation. Some government activities may not have a cost for services calculation, or may not be modified, altered or eliminated due to contractual obligations. These exceptions might include debt service, leases, inter-local agreements or funding formulas to local governments. These types of exception items are set aside as ineligible and left to upper management to re-incorporate into the final budget.
Each decision unit then proceeds to segregate the total costs and measured benefits of ZBB eligible activities into separate subunits called “decision packages.” Decision packages are segregated based upon functional, operational, or program level characteristics. They may be current activities, or requests for new activities within the decision unit. The 1973 Zero-Base Budgeting Manual of the State of Georgia defines a decision package as “an identification of a discrete function or operation in a definitive manner for management evaluation and comparison to other functions” (Minmier & Hermanson, 1976, p. 9).

Examples of decision packages in a senior services decision unit might be: home meal delivery, senior daycare services, senior exercise, senior activity trips, senior health education, and senior continuing education. Decision packages may also be segregated based upon capital expenditures or capital projects such as the purchase of a front loader, or the construction of a new senior center.

In segregating decision packages, and considering requests for new or expanded activities, decision unit evaluators need to pay close attention to the general budget guidelines communicated by the executive level of state management during the Planning Phase. Failing to do so can result in wasted effort in the creation of decision packages which are incompatible or have little economic or political feasibility.

**Step #4: Brainstorming Alternative Delivery Methods and Effort Level Scenarios**

Once the decision packages have been segregated, decision unit evaluators are asked to brainstorm new ways to deliver the same service, to predict the resulting impact of each alternative on the organization’s strategic plan, and to make a recommendation in light of the organization’s strategic goals. The decision unit evaluator should recommend the most efficient and effective delivery method, unless problems such as political infeasibility conflict. This recommendation should generally reflect maximum services for minimum costs.

Another important piece of the ZBB process is “effort” level. An effort level is a defined percentage of the previous year’s budget to be used for a decision package. There are often three effort levels established organization-wide, by executive management during the Planning Phase, to be applied to all decision packages. These could include a minimum
service funding target (such as 80 percent), flat funding (at 100 percent) and expanded service funding (such as 105 percent). Establishing a minimum funding level requires decision units to consider funding cuts in an activity while preserving services. An 80 percent effort level translates into 80 percent of the previous year’s decision unit budget and may result in reduced services unless an alternative delivery method can compensate. Decision units must therefore develop differing service impact scenarios for each decision package at the various “effort” (funding) levels.

In Peter Pyhrr’s original ZBB structure, each new effort scenario becomes its own separate decision package, to be filled out on separate forms. In its own implementation, the State of Georgia combined all three effort levels into one decision package on one form. This reduced paperwork and allowed for a side by side comparison showing the impact of incremental change above the minimum service funding target. If a decision package has no other possible funding levels that will allow delivery of the service, such as a fixed contract from a sole service provider, then only one effort recommendation will be made with an explanation as to why no other effort levels are possible.

Draper and Pitsvada’s 1981 evaluation study of ZBB implementation at the federal level, found that it was inefficient for upper management to set the minimum funding level as an across the board target for all decision units. Departments will vary in regards to the amount of slack funding available in each budget. As a result, it was suggested that departments should assist in setting the minimum effort level for each department so that funds are not “left on the table” inadvertently due to executive management’s lack of specific activity knowledge. In the federal case, it was found that when minimum levels were set too high, agencies were no longer motivated to seek out solutions at the true minimum level of funding (Draper & Pitsvada, 1981).

**Step #5: Using a Decision Package Form**

Once these tasks are complete for all activities within the decision unit, the information for each decision package is entered onto a specially designed decision package form. There are many different examples of this form available, which may include differing pieces of data; however, all of them accomplish the same general goals. Example 1 uses the State of Georgia’s decision package form, refined during its early implementation of ZBB.
### Example 1. Sample Decision Package: 20XX Fiscal Year Budget.

<table>
<thead>
<tr>
<th>(1) Package Name</th>
<th>(2) Agency</th>
<th>(3) Activity</th>
<th>(4) Organization</th>
<th>(5) Priority Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Quality Laboratory (1 of 3)</td>
<td>Health</td>
<td>Air Quality control</td>
<td>Ambient Air</td>
<td>3</td>
</tr>
</tbody>
</table>

#### (6) Statement of Purpose

Ambient air laboratory analysis must be conducted for the identification and evaluation of pollutants by type and by volume. Sample analysis enables engineers to determine the effect of control, and permits the use of an emergency warning system.

#### (7) Description of Actions (Operations)

Operate a central lab to conduct all sample testing and analysis: 1 Chemist II (FTBE), 1 Chemist I (FTBE), 2 Technicians (FTBE), and 1 Steno I (PTNB). This staff could analyze and report on a maximum of 37,300 samples. At 37,300 samples per year, we can only sample the 5 major urban areas of the state (covering 70% of the population). These 5 people are required at a minimum staffing level in order to conduct comprehensive sample analysis of even a few samples on a continuous basis. This would be a reduction of 27,700 samples from the current level of operations and funding.

#### (8) Achievement from Actions (Benefits)

Ambient air laboratory analysis yields valuable information for management and field engineers to enable the to evaluate the effects of the Air Quality Program, identify new or existing pollutants by type and value, and maintain an emergency warning system.

#### (9) Consequences of Not Funding Package

Field engineers would be forced to rely upon their portable testing equipment which does not provide the desired quantitative data, and greatly reduces the effectiveness of the emergency warning system which requires detailed quantitative chemical analyses. (The portable equipment only identifies pollutants by major type, it does not measure particle size, and does not provide quantitative chemical analyses to determine the specific chemical compounds in the pollutant.)

<table>
<thead>
<tr>
<th>(10) Quantitative Package Measure</th>
<th>FY 20XX-2</th>
<th>FY 20XX-1</th>
<th>FY 20XX</th>
<th>(11) Resources Required</th>
<th>FY 20XX-2</th>
<th>FY 20XX-1</th>
<th>FY 20XX</th>
<th>% Change (FY 20XX)/(FY 20XX-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Samples Analyzed and Reported</td>
<td>38,000</td>
<td>55,000</td>
<td>37,300</td>
<td>Operational Grants</td>
<td>160</td>
<td>224</td>
<td>140</td>
<td>63%</td>
</tr>
<tr>
<td>Cost Per Sample</td>
<td>$4.21</td>
<td>$4.07</td>
<td>$3.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Samples per man hour</td>
<td>3.8</td>
<td>3.9</td>
<td>3.7</td>
<td>Capital Outlay Leases</td>
<td>160</td>
<td>224</td>
<td>140</td>
<td>63%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>Personnel Positions</td>
<td>160</td>
<td>224</td>
<td>140</td>
<td>63%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>7</td>
<td>5</td>
<td>71%</td>
</tr>
</tbody>
</table>

Manager: J Smith
Prepared By: J Smith
Date: 1/1/20XX-1
Page: X of X
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**Public Administrator**

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**Example 1 (continued). Sample Decision Package: 20XX Fiscal Year Budget**

<table>
<thead>
<tr>
<th>Package Name</th>
<th>Agency</th>
<th>Activity</th>
<th>Organization</th>
<th>Priority Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Quality Laboratory</td>
<td>Health</td>
<td>Air Quality control</td>
<td>Ambient Air</td>
<td>3</td>
</tr>
</tbody>
</table>

**(12) Alternatives (Different Levels of Effort) and Cost**

Air Quality Laboratory (Effort Level 2 of 3): $61,000 - Analyze 27,700 additional samples (totaling 55,000 samples, which is the current level of operation and funding), thereby determining air quality for 5 additional problem urban areas and 8 other countries chosen on the basis of worst pollution (covering 80% of the population).

Air Quality Laboratory (Effort Level 3 of 3): $45,000 - Analyze 20,000 additional samples (totaling 75,000 samples, an increase of 20,000 over current levels of operation and funding), thereby determining air quality for 90% of the population, and leaving only rural areas with little or no pollution problems unsampled.

**(13) Alternatives (Different Ways of Performing the Same Function, Activity, or Operation)**

**Alternate Delivery 1** - Contract the sample analysis work out to Georgia Tech at a cost of $6 per sample for a total cost of $224,000 for analyzing 37,300 samples (a 27,700 sample reduction from current levels of operation and funding). The emergency warning system would not be as effective due to their time requirements on reporting analysis work done by graduate students.

**Alternate Delivery 2** - Conduct sample analysis work entirely in regional locations at a total cost of $506,000 for the first year, and $385,000 in subsequent years. Specialized equipment must be purchased in the first year for several locations if the central lab is discontinued. Subsequent years would also require minimum levels of lab staffing at several locations which would not fully utilize people or resources due to low service demand periods.

**Alternate Delivery 3** - Conduct sample analysis work in the central lab for special pollutants only, and set up regional labs to reduce sample mailing costs, at a total cost of $305,000 for analyzing 37,300 samples (a 27,700 sample reduction from current level of operations and funding). Excessive costs would persist due to required minimum levels of lab staffing at several locations in addition to staffing the specialized central lab.

**Explanation:**

[Modified from source: (Bhada & Minmier, 1975; Minmier & Hermanson, 1976)]
A decision package form consolidates the information necessary for managers to make cost and services comparisons which contribute to the rankings process. The form should allow departments to give upper management a synopsis of the program, its benefits, program measurements, historical funding and staffing, the final recommended delivery method, delivery alternatives, varying funding effort levels, and a summary of potential outcomes. In addition, the form should assist in future budget planning by requiring funding projections for up to five years in the future, capturing any fluctuations which may occur due to such things as one-time expenditures, project implementation schedules, or planned growth.

Example 1 shows a decision package for the Department of Health’s Air Quality Laboratory program. Sections 1 through 5 are basic decision package identification data, while section 6 presents a general Statement of Purpose of the decision package. Sections 7 and 8 describe the services provided and benefits resulting from the decision package. Sections 9 indicates the consequences of not funding this package. Sections 10 and 11 present both three years of historical cost data, and projected cost data for the following three years, at the base level. Section 12 indicates alternate effort levels of funding that might be selected and which would increase services from the base level. This example shows the alternative effort levels for the Air Quality Laboratory program and the resulting cost. Alternative 2 of 3 reflects services unchanged at 55,000 air samples while Alternative 3 of 3 reflects increased services up to 75,000 air samples, and related costs. Alternative delivery methods to accomplish the same service are presented in section 13. These are additional methods that the decision unit has brainstormed but which are not currently recommended. Finally, section 14 provides both past and future funding information for the decision package.
Step #6: Decision Unit—Prioritization of Decision Packages and Effort Levels

The decision unit’s final task is to prioritize their decision packages valuing one decision package over another, taking into consideration the data collected and upper management’s strategic guidelines. Using the information provided in the decision packages, the ranking is performed in answer to two questions:

1) What operations are most important in reaching the goals and objectives of an organization?

2) How much should be spent for each operation? (What effort level should be recommended for each activity?) (Bhada & Minmier, 1975).

Example 2 shows a decision ranking form used by the State of Georgia in their ZBB process. Decision packages are ranked by the decision unit evaluator from the most important to the least. The far right column shows the cumulative percentage total of the previous year’s budget based upon state sources of funding and excluding grant funding.

### Example 2. State of Georgia Ranking Form

<table>
<thead>
<tr>
<th>Package Name</th>
<th>Total FY 20XX-1</th>
<th>State FY 20XX-1</th>
<th>Positions</th>
<th>Total FY 20XX</th>
<th>State FY 20XX</th>
<th>Positions</th>
<th>Cumulative Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reviews and Permits</td>
<td>129,000</td>
<td>129,000</td>
<td>14</td>
<td>116,000</td>
<td>116,000</td>
<td>13</td>
<td>16%</td>
</tr>
<tr>
<td>Registrations</td>
<td>113,000</td>
<td>113,000</td>
<td>12</td>
<td>103,000</td>
<td>103,000</td>
<td>10</td>
<td>29%</td>
</tr>
<tr>
<td>Air Quality Laboratory</td>
<td>224,000</td>
<td>200,000</td>
<td>7</td>
<td>140,000</td>
<td>100,000</td>
<td>5</td>
<td>43%</td>
</tr>
<tr>
<td>Source Evaluation (1 of 2)</td>
<td>326,000</td>
<td>204,000</td>
<td>11</td>
<td>273,000</td>
<td>253,000</td>
<td>9</td>
<td>77%</td>
</tr>
<tr>
<td>Ambient Air Monitoring</td>
<td>53,000</td>
<td>43,000</td>
<td>6</td>
<td>53,000</td>
<td>43,000</td>
<td>6</td>
<td>83%</td>
</tr>
<tr>
<td>Air Quality Laboratory (2 of 3)</td>
<td>617,000</td>
<td>43,000</td>
<td>6</td>
<td>61,000</td>
<td>43,000</td>
<td>6</td>
<td>86%</td>
</tr>
<tr>
<td>Research (1 of 2)</td>
<td>57,000</td>
<td>38,000</td>
<td>3</td>
<td>57,000</td>
<td>38,000</td>
<td>3</td>
<td>93%</td>
</tr>
<tr>
<td>Source Evaluation (2 of 2)</td>
<td>45,000</td>
<td>25,000</td>
<td>2</td>
<td>45,000</td>
<td>25,000</td>
<td>2</td>
<td>102%</td>
</tr>
<tr>
<td>Air Quality Laboratory (3 of 3)</td>
<td>24,000</td>
<td>24,000</td>
<td>1</td>
<td>24,000</td>
<td>24,000</td>
<td>1</td>
<td>105%</td>
</tr>
<tr>
<td>Total</td>
<td>962,000</td>
<td>745,000</td>
<td>55</td>
<td>957,000</td>
<td>782,000</td>
<td>54</td>
<td></td>
</tr>
</tbody>
</table>

*FY20XX Cumulative State Ss as a % of Total FY 20XX-1 State S's for corresponding organization(s).

(Modified from source: Pyhrr, 1973, Exhibit 5-1, p.80)
Notice that line 3 on the decision package ranking form reflects the base funding level for the lowest effort level, as shown on the decision package form (see section 11 in Example 1). Lines 6 and 9 indicate additions in requested funding required for the activity to be performed at higher effort levels, as described on the decision package form (see section 12 in Example 1). In this ranking example, if all decision packages, including the additional cost of increased effort levels reflected in line items 6, 8, 9 and 10, were recommended, the requested decision unit budget would be a cumulative 105 percent of the previous year’s state funding (line 10, far right column).

Cutoff Lines

The cumulative level percent column is used in combination with a variable “cutoff” line. The cutoff line defines a desired level of funding for the decision unit based upon the previous year’s funding—typically less than 100 percent. This amount is set by executive management, with the assistance of departments, during the development of the initial budget guidelines. The cutoff is different from effort levels in that it addresses a funding cutoff point for all of the aggregated services of a decision unit, rather than for a single decision package. It is described as “variable” because the value may vary by decision unit due to perceptions of over or underfunding of the unit in the previous year. The cutoff value should increase as more decision packages are consolidated at the next level of ranking, allowing for additional discretion by the next level of management.

If the cutoff line in example 2 was set at 85 percent, then items 1 through 5 would be recommended. The ranking order of the items above the cutoff line (less than the cutoff value) will not be as important as the relative ranking of those decision packages below, because those above are likely to be taken as a whole and approved in the final budget. If additional funding is available for allocation, then the relative ranking of those decision packages below the cutoff line becomes extremely important as the cutoff line ratchets incrementally lower, taking in additional decision packages and increased service funding options.
Step #7: Upper Tier—Consolidation and Decision Package Ranking

The next tier of management, known as the lower tier manager, is responsible for consolidating the ranked submissions with those of other decision units under them. They compare and reprioritize all decision packages based upon executive management’s guidelines and their designated cutoff line. This is the level at which management begins the process of valuing decision packages across decision units for the allocation of funding. By the end of this process, it is possible that a decision unit may have all, or none, of its decision packages recommended. In the case of a business, recommending none of a decision units decision packages may mean that the lower tier manager is recommending the elimination of a product line.

EXAMPLE 3. DECISION TIERS FOR CONSOLIDATION

Example 3 demonstrates a consolidation process with eight decisions units, 127 decision packages and three tiers of management (lower, upper and executive). The final number of management review levels (tiers) will be unique to each organization and will depend upon its size, the number of decision packages to be consolidated at each level will depend on time and manpower constraints, the ability to create natural groupings, and management’s willingness to prioritize activities in unfamiliar territories. Failure to create enough review levels may lead to an overwhelming number decision packages to consolidate and rank at the highest review levels. Unlike the 1970’s, organizations today have the benefit of using powerful computers and spreadsheet software to assist with this process, potentially simplifying the process.
Determining the number of levels at which rankings will occur is an important part of the planning phase by executive management, with the help of department heads. Whereas many private businesses tend to be narrowly focused on what they produce, or the services they provide, government entities tend to provide a large and diverse range of services. This leads to a larger number of decision units which can potentially generate a greater number of decision packages requiring review. Failure to create enough ranking levels for consolidation of decision packages will result in information overload when the packages finally reach the executive level. In addition, given multiple levels of ranking, enough time will have to be provided for proper consideration, ranking and consolidation to occur. These points were overlooked during the first Georgia implementation of ZBB. As a result, Governor Carter’s office received nearly 10,000 decision packages, which was significantly more than they were able to review (National Conference of State Legislatures, 2011).

The same ranking process used at the decision unit level, is employed by the lower tier of management with a larger group of decision packages. The new cutoff line is generally set either at the same level, or higher, than the one used by decision units. Increasing the cutoff line provides managers in higher decision tiers with additional funding to reallocate between decision units based upon their judgment of relative priority. In example 4, the cutoff lines for the four decision units ranged from 70 to 80 percent of their previous year’s budget. Meanwhile, the cutoff lines for the next decision level are set at 80 to 85 percent of the previous year’s budget, allowing those managers additional discretion in recommending decision packages.
Step #8: Executive Level Ranking and Consideration

The process of consolidation and reprioritization eventually reaches the executive level of management for a final decision as to the relative importance of functions, and budgetary cutoff levels (see example 4). Prioritization does not require that executive management reprioritize all decision packages. Instead, they may only want to focus on those decision packages near their cutoff line. Relying on the judgment of lower levels of management, all other decision packages may be placed in either the upper or lower half of the rankings. Those options falling within the cutoff are retained and incorporated into the next year’s budget, while those falling outside are cut, or reserved for the possible reallocation of any additional funding found later.
The “ABC Approach to Ranking”, proposed by Paul Stonich in Zero-Base Planning and Budgeting, suggests a first run that separates the decision packages into three increments. Increment A contains those decision packages that must be funded. Failure to fund them would be detrimental the organization’s goals and mission. Increment B contains those packages which could, or could not, be funded without having a significant impact on the organization. Increment C contains those packages which should be rejected outright, having little impact or relation to the organization’s strategic plan and mission. Once completed, executive management will only have to consider those decision packages contained in Increment B to reach its final budget (Stonich, et al., 1977).

Finally, all of the decision packages selected for approval are disassembled into proper budget lines within departments. These are combined with those expenditure items deemed inappropriate for ZBB review, resulting in a completed budget.
IV. Strengths, Weaknesses and Lessons Learned in ZBB Implementation

Strengths of ZBB

Since the 1970s, many government entities have attempted to implement ZBB in one form or another and few have succeeded.

The full implementation of a Zero-Base Budgeting process is not an easy task, but may be worth pursuing for its many benefits. The anticipated advantages of a successful Zero-Base Budgeting implementation can include:

1. An annual analysis and justification of all base budgets by activity, unlike incremental budgeting (Stonich, et al., 1977).

2. Increased involvement of front line managers in the budget process who may typically be left out (Pyhrr, 1973).

3. A more efficient allocation of resources in line with an organization’s strategic plan and economic constraints (Pyhrr, 1973; Stonich, et al., 1977).

4. A comparison and ranking of programs against each other, resulting in the elimination of those of lesser value to the organization (Pyhrr, 1973).

5. Better budget information resulting in the identification of duplicate, redundant or obsolete services, activities or functions (Minnier & Hermanson, 1976).

6. An annual review of activities by lower levels of management forcing them to consider alternative delivery methods at lower funding levels (Stonich, et al., 1977).

7. The ability to find funding internally for new programs through more efficient service delivery and priority ranking of programs (Pyhrr, 1973).

8. The planning portion helps to provide low level management with the information necessary to understand how their own activities fit into the overall strategic plan of the organization (Pyhrr, 1973).

9. Upper level management benefits from lower level management’s detailed knowledge of day to day operations, thereby increasing budget information quality (Pyhrr, 1973).
10. Upper level management is provided with a wider range of budget choices related to varying levels of service and delivery than they might otherwise have access to (Stonich, et al., 1977).

11. Finally, it can result in improved communication and open discussions between lower and upper management, leading to a beneficial exchange of ideas (Stonich, et al., 1977).

**Weaknesses/Lessons Learned**

Those who have previously researched the federal and Georgia attempts to implement ZBB during the 1970’s, have identified the following problems that management should be aware of and possibly prepare for, including:

1. A steep learning curve for all employees. Employees unfamiliar with budgeting will likely be needed in the ZBB process and require training in both process and cost analysis.

2. Full “buy in” will be required from all departments. Fears regarding possible reductions in funding will need to be subdued through education regarding efficiency analysis.

3. The necessary time and resources will need to be provided, including additional manpower. Initial implementation will require additional time as decision units, decision packages, and cutoffs are defined. The learning curve is steep, but levels out after the second year (Pyhrr, 1973).

4. Clear policy guidance will need to be provided from the beginning in order to effectively rank decision packages and avoid political conflict later.

5. Ample lead time must be provided to collect cost information that will be required for the process. There probably won’t be enough time during the budget process to build the necessary databases concurrently.

6. Conflicts may occur between cost analysis and political considerations when ranking programs. The reason a program is continually renewed may not be based upon the underlying value of a program (Office of Research, 1977).

7. During past implementations, critics have complained that the amount of paper generated by the ZBB process was overwhelming. In a 1979 survey of agencies regarding its impact on paper output at the federal level, responses ranged from a slight increase to over thirty times the
usual amount of paperwork. The average response was a doubling in paperwork production (Borsting, 1982; Draper & Pitsvada, 1981).

8. It is highly unlikely that applying Zero Base Budgeting to all state departments on an annual basis is feasible. The large number of decision packages generated by large service organizations due to the range of services offered would overwhelm the ranking and consolidation process (Snell, 2009).

9. ZBB is a rational comparison process. As a result, the general public can better comprehend the basis for making budgetary decisions, inviting closer inspection and criticism. This can be threatening to an agency that is used to making decisions with less oversight (Snell, 2009).

Additional lessons regarding the implementation of Zero-Base Budgeting can be learned by reviewing the 1970’s implementation experience of both Georgia and the federal government during the Carter administrations.

**ZBB Requires Delegation**

Though guided by an organization’s strategic plans and goals, ZBB is a bottom-up management process which ranks and evaluates the efficiency of activities starting at the lowest levels of management. It emphasizes evaluation of decision units by front line managers to find new ways to accomplish the same services and programs more efficiently. The process then consolidates the contributions and judgment of many levels of management, incorporating their ideas and evaluations into the final budget decision. As a result, it requires a willingness to delegate decision authority down the chain from upper management. Failure to delegate authority to compare and rank decision packages will lead to information overload and overall process failure by the time accumulated decision packages reach the top layer of management. Upper management will have neither the time, nor knowledge to make all the comparative evaluations themselves.

**ZBB Requires Organization-Wide Preparation and Education**

ZBB requires significant preparation and education in order to implement successfully. The following are pitfalls experienced in previous implementations related to management failures:
First, decision units must have executive level guidance before starting the process. This should be general in nature, addressing the organization’s overall direction. A thoughtful and appropriate level of guidance will help ensure that decisions and analysis are being performed in accordance with the organization’s strategic plans and its view of the economic environment in the following year. Failure to prepare this guidance before the process begins can result in misdirected analysis at the front line, incompatible recommendations, wasted time, and resources. Further such guidance can be used to create incentives for managers to think creatively. (Pyhrr, 1973).

Second, as ZBB is first implemented, departments may find preparing decision package options at minimum levels threatening, fearing a loss of resources (Snell, 2009). This can lead to shielding key employees, protecting programs, and providing misinformation (Schick & Hatry, 1982), resulting in biased prioritization toward existing programs and services, rather than towards optimal efficiency. Including departments early in the planning process, and communicating that more efficient methods of delivery can free up additional resources for priority programs in their areas, may help to gain buy in for the new process.

Third, implementing ZBB can be a major cultural change for an organization. Decision units must be convinced that this is not another fad budget application, but rather a significant policy change by upper management with the expectation that it will continue into the future. Management can demonstrate its commitment to the process through open communication and the provision of time, education, and resources necessary to implement the process.

The conversion from an incremental budgeting process to a Zero-Base Budgeting process is a significant change for managers. As time progresses, managers will become more familiar with the process, gain more knowledge about their programs and alternative service options available. Additionally, the information necessary to the process will be properly collected throughout the year. Experience and education should lead to departmental commitment as time progresses.

Fourth, cost data, measurement data, and the training to use that data must be made available to all employees involved in the process. During Georgia’s first year of implementation, employees often lacked the cost data to make reliable comparisons. In a
1974 survey of 31 Georgia departments as well as Office of Planning and Budget (OPB) budget analysts, 62 percent of those surveyed felt that the necessary cost data was not made available during the first year of implementation, and 31 percent continued to believe that the lack of data was never resolved (Minmier & Hermanson, 1976).

Activity measurement data, in order to make comparisons of cost to benefit, may also be a problem. A 2007 survey of legislative fiscal officers by the National Conference of State Legislatures found that only half of the U.S. States link budgets with performance measurements (Snell, 2009). Without accurate cost and service measurement data at the activity level, it is difficult to make cost comparisons between various services.

Fifth, during the first year of Georgia’s implementation, Peter Pyhrr found that many of the decision unit submissions were useless due to a lack of training in process and budget analysis (Pyhrr, 1973). Participants did not know how to collect, analyze and evaluate the data. This was mainly due to the fact that implementing ZBB required the involvement of new participants to handle the additional work.

Sixth, plan on enough time to properly implement the system during the first year. Georgia’s first year of implementation included training in April, May and June, decision package construction in June and July, and ranking in August. Based upon the problems encountered with decision package construction and information collection, this was not enough time for a successful first-year implementation (Bhada & Minmier, 1975).

Managers Need to be Aware of How Decision Units May “Game the System”

Schick and Hatry (1982) caution that Zero-Base Budgeting does not always accomplish its goal of assessing services and their method of delivery based solely on efficiency and priority. Instead, some departments look at it as a forced budget reduction process. As a result, they may engage in a host of counterproductive strategies to anticipate the cuts or shield their organization from cuts. One problem observed was that if managers assume that the cutoff percentage represents a potential cut, they may begin to eliminate expenditures such as vacant positions, travel, education, and supplies rather than engaging in the ZBB service level approach (Schick & Hatry, 1982). Clear guidelines, instructions and education, combined with actively watching for this behavior at the next decision tier, should help to reduce this problem.
As noted earlier, the fear of losing resources can lead to shielding key employees, protecting programs, and providing misinformation in the ZBB process itself. For example, an Idaho fiscal officer referred to the “lifeboat” strategy in which a department transferred key employees in threatened low priority programs, into another minimum service level decision package (Schick & Hatry, 1982). Fear can result in biased prioritization toward existing programs and services, rather than towards optimal efficiency. Open discussions about the process, assurances that management’s goal is for efficiency, and the prospect of freeing up funding for new programs may go a long way in solving this problem.

Evaluators need to be aware that decision units who want to increase their funding may be motivated to mis-rank decision packages. If a decision unit knows that a particular decision package must be recommended for funding, they may be tempted to rank it just below the cutoff line (Snell, 2009). Everything above the cutoff line is therefore recommended, while the mandatory decision package is not. This can force the next level of review to extend the cutoff line lower to include the mandatory decision package, resulting in a recommended increase in funding for the decision unit. This deception can be caught by management at the next decision tier by inspecting decision packages above the line for any that would otherwise stand out as “marginal” for final approval.
V. Current Trends in ZBB

Zero-Base Budgeting was “perceived as a response to the politics of scarcity in the late 1970’s” (Draper & Pitsvada, 1981) and has resurfaced as a prominent topic during the most recent economic downturn. According to the National Association of State Budget officers, in 2008 there were 17 states using some form of Zero-Base Budgeting (National Association of State Budget Officers, 2008), but no state has successfully implemented ZBB as it was originally designed by Peter Pyhrr (Snell, 2009). Instead, they are using modifications either in timing, structure, or breadth of application.

In the 1990’s, a blend of incremental and Zero-Base Budgeting was used in Iowa, resulting in a reduced number of decision packages. In this variation, agencies are automatically given a base budget equal to 75 percent of their previous year’s funding. Agencies may allocate the base 75 percent at their own discretion. If the agency wants an additional 25 percent, then decision packages are created to justify the additional funding above 75 percent (Snell, 2009). This significantly reduces the number of decision packages requiring review.

Due to the potentially large number of decision packages that may be generated by ZBB, many states are concerned that there may not be enough time or resources to evaluate them all on an annual basis. Some of the recent reforms provide significant lead time for implementation – for instance Maine started planning in 2011 for the rollout of ZBB in 2013 (Snell, 2009). Additionally, many of the recent ZBB reforms adopted by states create cycles where each agency may be up for review once every four to eight years rather than all at once (Snell, 2010).

Other pieces of both state and federal legislation have attempted to incorporate Zero-Base Budgeting reviews with sunset provisions for programs. A sunset provision is a time limited authorization of a program such as three or five years. Once a program has operated for an authorized period, it requires reauthorization by the governing body or it ends. Combining ZBB with a sunset provision requires that all of its activities and delivery methods are analyzed during its final year of authorization, providing additional information about the program’s efficiency to executive management. This would be a way to encourage at least a periodic review without overburdening government resources (National Conference of State Legislatures, 2011).
VI. Conclusion

The bottom-up orientation of the ZBB process continues to offer some hope of solving efficiency issues in public programs as it improves the quality of management information. A 1975 follow-up survey of 31 Georgia budget analysts found that 84 percent were in favor using Zero-Base Budgeting again, even with their problematic experience during its first years of implementation (Minnier & Hermanson, 1976). Though Georgia’s implementation did not result in a significant reduction in expenditures, it did result in a redirection of funding to more highly valued projects, while identifying duplicated service efforts (Lauth, 1978). It also led to an overall better understanding of the comparable tradeoff between services and costs.

Proper implementation remains the main obstacle, much of which may be resolved through experience. Implementing ZBB 40 years later should prove much easier given the development and common use of powerful computers, spreadsheet and decision flow software. In 1970, only 28 percent of state agencies used computers to compile budgets, and 16 percent of state budget offices. By 1990 all states used computers in the budget process (Lee, 1991). These tools will significantly improve the speed of the consolidation and ranking process, allowing for easier adjustments at higher levels of management, while greatly reducing both required staffing and document volume at each decision level. Combining these new tools with current ZBB modification trends, such as sunset reviews or periodic reviews, may lead to a large reduction in workload, making the process more feasible for implementation.
Zero-Base Budgeting for the 21st Century
Public Administrator

References


About the Author

Ron Shelby is a PhD student at the Andrew Young School of Policy Studies, and a Graduate Research Assistant with the Fiscal Research Center. His area of concentration is Public Finance and Budgeting, with an interest in the use of financial policies by local governments. Previously, he worked as the Director of Finance and Administration for Galveston County, Texas. He did his undergraduate work at Stanford University in economics, and received both an MS in Finance and an MBA with an HR concentration from the University of Houston Clear Lake.

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