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The Cost of Benefits
Applying Earned Benefit Management
by Crispin (Kik) Piney

Applying Earned Benefit Management[1]

The Cost of Benefits[2]

If you can't track the allocations, you can't understand the situation!

By Crispin ("Kik") Piney, PgMP, PfMP

Introduction: Link to the Previous Article

The tagline of the previous article was "If you can't track it, you can't manage it" and explained how to determine the contribution to the benefits of each component project throughout the lifetime of the program. The article finished by pointing out that, although we were now in a position to know the contribution of each component project to the planned benefits, we did not know how to share the estimated project costs between the other components of the model. This article will provide an innovative solution to this challenge and present some of the ways in which this additional knowledge can improve program decision-making.

Reminder on Benefits Maps

The first articles (Piney, 2018b; Piney, 2018c] in this series [Piney, 2018a], explained how to build a benefits realization map (BRM) and how to evaluate the contribution of each component of this map to forecast the strategic benefits of the total program (the "Benefits Allotment Routine" – BAR). These concepts were illustrated on a simple case study. This introduction provides a brief reminder of these ideas.

A BRM illustrates how to make the benefits happen. It can be constructed as follows.

Once the anticipated benefits have been defined by the strategic sponsor, you need to determine all of the steps that are required to construct this result, thereby allowing you to identify the necessary component projects. The dependencies from each logical step to the next are quantified for each dependency in the logical chain. The BAR uses the forecast value of the strategic objectives in conjunction with this link information to calculate the contribution of every node in the BRM to the anticipated benefits. In particular, the BAR evaluates the contribution to the anticipated benefits of each component project. This value is known as the "Earned Benefit At Completion" (EBAC) of that component project.

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[1] This series is by Crispin "Kik" Piney, author of the book <u>Earned Benefit Program Management, Aligning, Realizing and Sustaining Strategy</u>, published by CRC Press in 2018. Merging treatment of program management, benefits realization management and earned value management, Kik's book breaks important new ground in the program/project management field. In this series of articles, Kik introduces some earned benefit management concepts in simple and practical terms.

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The Earned Benefit of a component project at a given point in time is evaluated from its EBAC in proportion to the its degree of completion at that point. The Earned Benefit of the total program is defined as the sum of all of the project Earned Benefits.

From this starting position, a more general approach to evaluating various numerical characteristics of the components of benefits maps will be developed in the current article.

Clarifications

I received the following comments on the previous article (Piney, 2018c) and will address them here to remove any misunderstandings it may have produced:

1. "… [The] only possible 'benefits' that I can imagine would come in the form of cost savings."

    ➢ Cost saving is not so much a benefit as a *project* performance indicator. However, I am addressing *programs,* and I should obviously have provided my definition of a benefit in this context. A program benefit is defined as: "*An improvement of one or more strategic or business-related results. Program benefits are normally set as a goal by senior management along with the corresponding, quantified objectives*". For example, an underground mining project (Wibikskana, 2012) would normally be one of the components of a program that also needed to address power generation, storage and distribution of the extracted product, environmental considerations, etc. in order to obtain benefits such as profits, market share etc., while avoiding disbenefits to reputation due to environmental issues caused by the mining operations. These *program* benefits accrue to the mining company in this case, whereas *project* cost savings are a main consideration for the mining contractor. For this reason, the program manager should use the Earned Benefit Method (EBM), whereas the project manager would apply the Earned Value Method (EVM).

2. "I don't understand how you calculated the Benefits in Figure 1?"

    ➢ In Figure 1, the overall program benefits as defined by the dollar values of the strategic outcome (node K) are specified as an objective by senior management. The way in which business objectives are set and quantified by senior management is the domain of strategy setting and is outside the immediate scope of the program manager. In general, the problem of valuing non-financial benefits is still the subject of debate (see for example SROI 2012). However, the article described in detail how to evaluate the contribution of each of the other components of the benefits map, including the benefits contributions of each of the component projects, once these quantified strategic objectives had been specified.

3. "How can you claim to measure benefits when the project has yet to be completed? […] Asked another way, how can Activity A produce any measurable benefits until Activities C and D are also finished and the services actually implemented?"

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➢ My previous article did not address the challenge of *measuring* benefits. It presented the concept of "Earned Benefit" during program execution as a direct extension of the Earned Value approach to project performance measurement. As such, it measures the **potential** result of the work completed at each stage. To give a practical example, as a freelance consultant, I know full well that *earning* my fee and *receiving payment* are two related, but very separate, events.

➢ I intend to return to this fundamental question of "earned" vs. "delivered" in more detail in the next article in the series, but this will require the additional concepts that will be developed in the current article.

The Case Study

The business objective of the program in this example is to increase profits for an organization in the area of customer service. For the purpose of the case study, strategic analysis by senior management has shown that increased customer satisfaction with after-sales support enhances business results and has the potential for delivering a additional revenue of €300,000 per annum compared with the current level of business, but that this service will also lead to an increase in operational costs amounting to 25% of the corresponding financial improvement, thereby reducing the net benefit by the corresponding amount.

In the previous articles, the steps to achieving this benefit were developed and quantified, all the way back from the required strategic outcome across to identifying the projects required. The corresponding benefits map for this program, including the financial numbers mentioned above, is shown in Figure 1. One notable point about this case study is that, although the overall figures show a healthy return on investment, one component project (B: *Call Handling Tool*) costs more to the program than it contributes to the final benefit. The first article, however, explained why its inclusion may well be justified. More information is needed before a decision can be made reliably on whether or not to exclude this project.
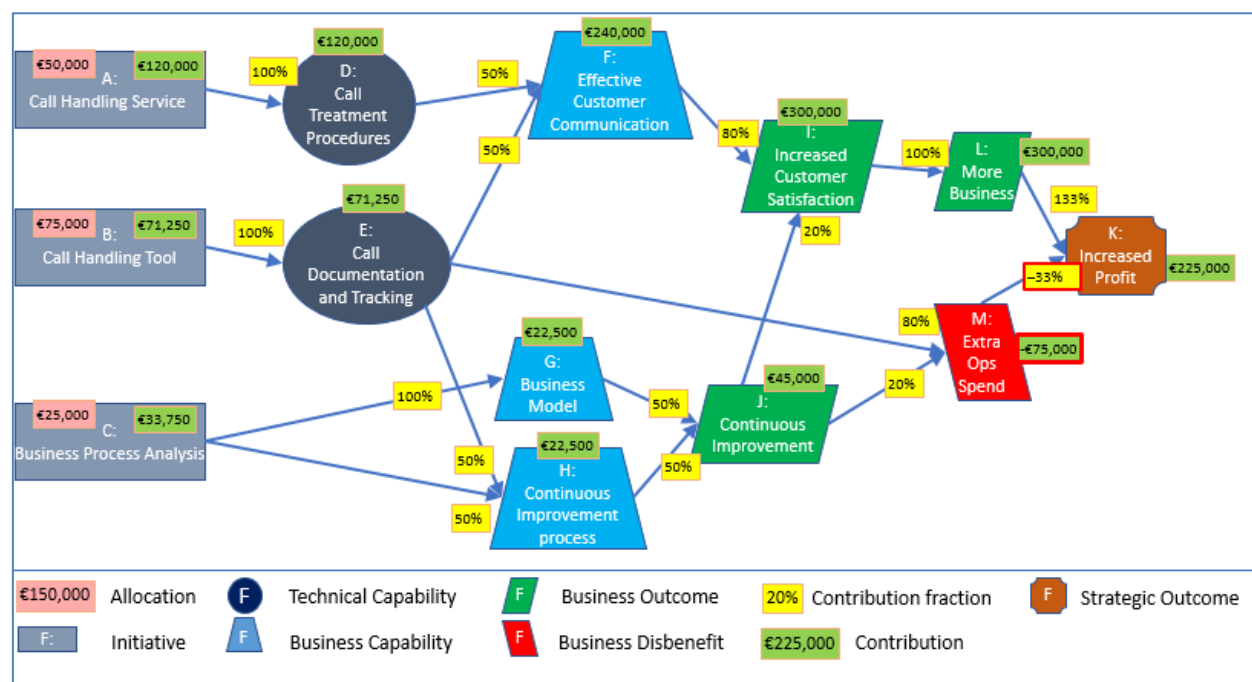
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Figure 1: Complete Benefits Map

In its current state, there are several important questions that the map does not answer, such as "how much are we committing to spend on *Effective Customer Communication*"? Finding the answer to this type of question entails developing a novel approach to allocation distribution that is missing from all of the earlier benefits management literature. This allocation distribution technique, as presented below, is also the basis for expanding the method to provide many additional capabilities required to manage programs effectively.

Required Characteristics of the Allocation Distribution Technique

After developing a rather unstructured list of potential options for developing the required algorithm, I realized that I needed to define some clear criteria that it had to satisfy, in the hope that this would reduce the set of remaining options to exactly one. This turned out to be the case.

I defined two necessary and sufficient criteria: compactness and equivalence.

The "compactness" principle states that the technique should use only the data already provided – that is to say: the structure of the map, the strategic contributions, the allocations to the component projects, and the contribution fractions. This is a constraint that I have not seen in other publications on benefits mapping. This principle excludes, for example, asking stakeholders to propose values for the allocation fractions. This exclusion has the major advantage of avoiding any increase in the subjectivity of the model while also eliminating the threat of stakeholders attempting to "game" the model at this point for personal or political reasons.

The "equivalence" principle is less obvious. My "aha!" moment came when I considered the very special case in which, for each project, its allocation is exactly equal to the corresponding

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evaluated contribution. Put another way, each of the projects in this case precisely breaks even: the cost allocation could then be said to be "equivalent" to the benefit contribution. This led to the equivalence principle that states that, if the project side of the model, calculated from right to left using the existing BAR algorithm, indicates that each project breaks even (i.e. allocation = contribution), then the required left-to-right algorithm for calculating the allocations should also deliver break-even values *for all of the other nodes in the map*.

The goal therefore becomes to find a "break-even everywhere routine" (or BEER) that uses only the data already defined for a benefits map.

The details of the algorithm to provide the BEER can be found in my book (referred to in the biography at the end of this article). However, in this article, the aim is to show how this addition to the existing set of benefits management tools can be applied to provide greater insight and control over the program.

The BAR and the BEER

As stated above, the BAR provides a right-to-left set of calculations that take the overall benefits contributions of the right-hand side and allot the predefined fractions of these contributions to each of the other nodes that compose the benefits map. As just explained, the BEER provides the corresponding set of left-to-right calculations that distribute the cost allocations assigned to the component projects across the benefits map in a manner that mirrors the results of the BAR. This ensures that, if you apply the (right-to-left) BAR on the benefits to find the contribution of each component project, and then apply the (left-to-right) BEER starting from the calculated component project contributions, you identically regenerate all of the other contribution numbers as delivered from the BAR. Another way of looking at this is that, given the contribution of any node, you can diffuse it to the right using the BEER and to the left using the BAR. The result of applying the BEER, as well as some of the ways in which this technique and the equivalence principle can be applied are presented in more detail below. Additional uses will be described in subsequent articles in this series, and others are provided in more detail, in the book.

Applying the BEER

The results of applying the BEER to the case study are given in Figure 2, showing the cost allocations for each node. By design, the total allocation of €150,000 to cover the three component projects on the left does appear as the total cost of achieving the strategic outcome (node M: *Increased Profit*) on the right.
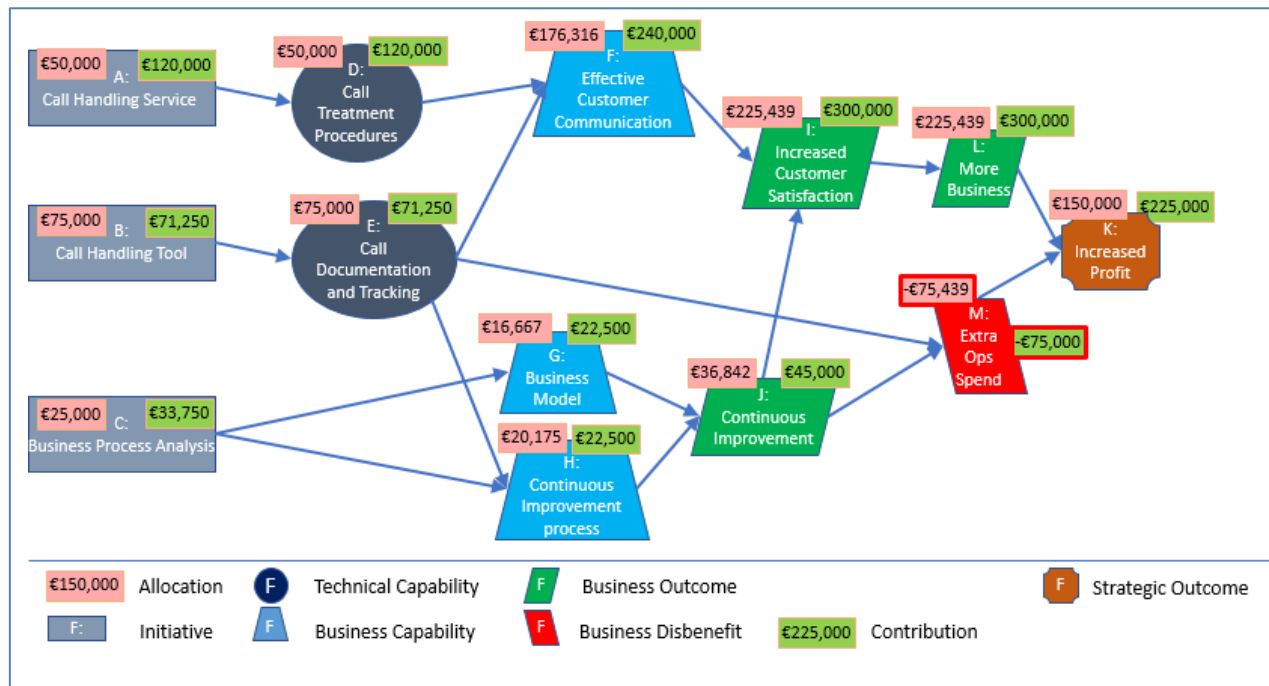
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Figure 2: BRM Showing all of the Cost Allocations

At first sight, this BEER capability may not appear very useful, because you may feel that you do not really gain much by knowing the financial contributions that apply to each node in the map. However, the BEER can be used to provide much more than this, because, by design, it distributes the values from the left-hand side across to the right-hand side in line with the equivalence principle. Two applications of this characteristic can be used to show the power of this technique

The Power of the BEER for Earned Benefit

The previous article provided an initial approach to calculating Earned Benefit: the benefit earned by a component project is proportional to the project's percent complete (PC) – i.e., the "Component Benefit Percent Achieved" (CBPA) (i.e., [Earned Benefit] / [Earned Benefit At Completion]) for each component project is set by convention to be equal the its PC as determined by the Earned Value Method. The initial approach simply stated that program's Earned Benefit is the sum over all component projects of their Earned Benefit. This is not wrong, but, thanks to the BEER, we are now in a position to calculate the Earned Benefit contribution *for every node in the map*.

This more complete approach starts from the Earned Benefit of the component projects, equal, as stated above for project i, to (PCi * EBACi). Because of the equivalence principle, we can calculate the Earned Benefit contribution of each of the remaining nodes in the BRM based on the set of component project Earned Benefits, as follows. We set the value of each component project to its Earned Benefit and, using the BEER, calculate from left to right starting from these values. This provides all of the remaining Earned Benefit values in the BRM, because, due to the fact that the BEER implements the equivalence principle, left-to-right application of the BEER reflects the effect of right-to-left application of the BAR. This complete set of Earned

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Benefit contributions provides valuable information as to the progress of each node. Once we know the Earned Benefit of a node (EBi for node i), we can then calculate its "component percent achieved", as *CPAi* = EBACi / EBi. CPAi is the EBM equivalent of the EVM PCi indicator.

As a worked example, we will take the Earned Value reports at a given point in time for the three component projects in the case study as follows:

A=*Call Handling Service*: PC=10%

B= *Call Handling Tool*: PC=40%

C=*Business Process Analysis*: PC=80%

Thanks to the BAR, we know the contribution of each node (i.e., their Earned Benefit at Completion), as shown in Figure 1. The corresponding Earned Benefit (EB) of each project is therefore:

A=*Call Handling Service*: EB$_A$ = 10% x €50,000 = €5,000

B= *Call Handling Tool*: EB$_B$ = 40% x €75,000 = €30,000

C=*Business Process Analysis*: EB$_C$ = 80% x €25,000 = €20,000

These individual, project Earned Benefit values can therefore be fed into the model, and the BEER applied. The result of these calculations, giving the Earned Benefit of each of the components, is shown in Figure 3, along with their corresponding *component percent achieved*.
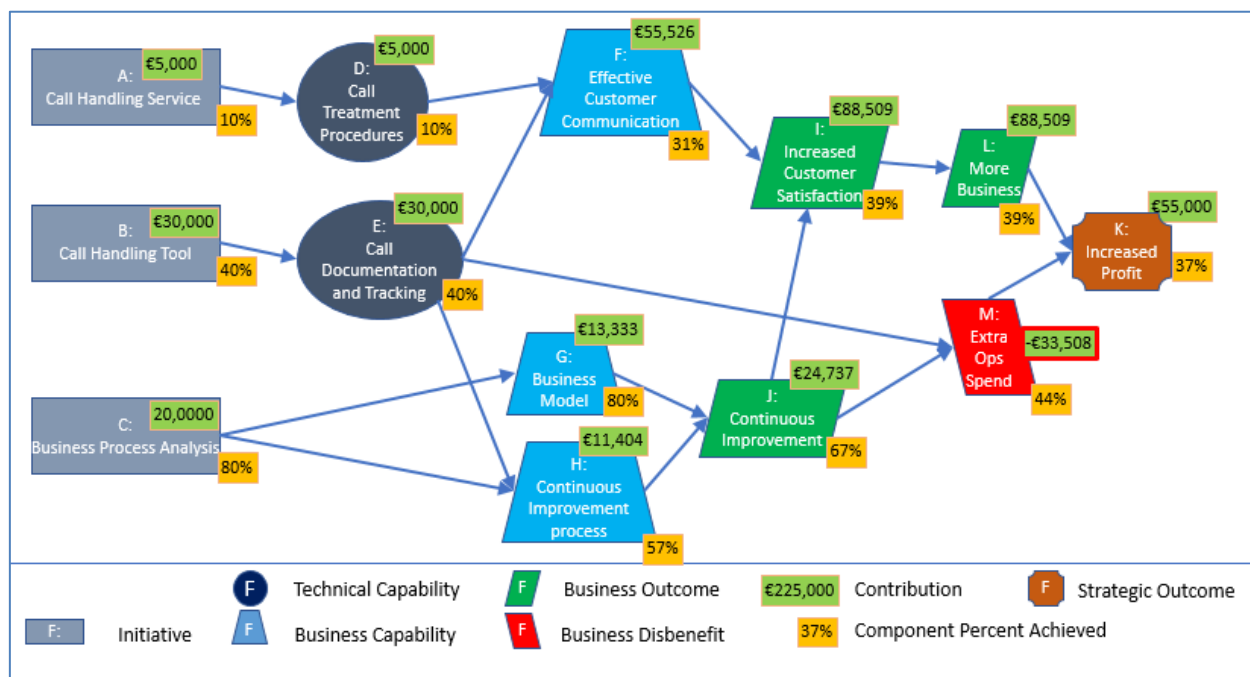

Figure 3: Left-to-Right Calculation of Earned Benefit

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The Power of the Beer for Component Analysis

As a separate application of the BEER, a similar approach allows you to analyse in more detail the effect of each component project individually.

For example, to evaluate the effect of any single component project on the overall program, set its value equal to its contribution as calculated by the BAR, set the values of all of the other component projects to zero, and then carry out the left-to-right calculations using the BEER on these numbers. The result gives the contribution of each node due to the selected component project (the Project *p* Contribution to Node *n* – PpNn). For each node, therefore, the relative importance of each component project to this node can be calculated by dividing its PpNn by its full contribution as calculated by the BAR. This ratio represents the Percent Total Contribution of node *n*.

The result of this analysis for node *B=Call Handling Tool* is shown in Figure 4.
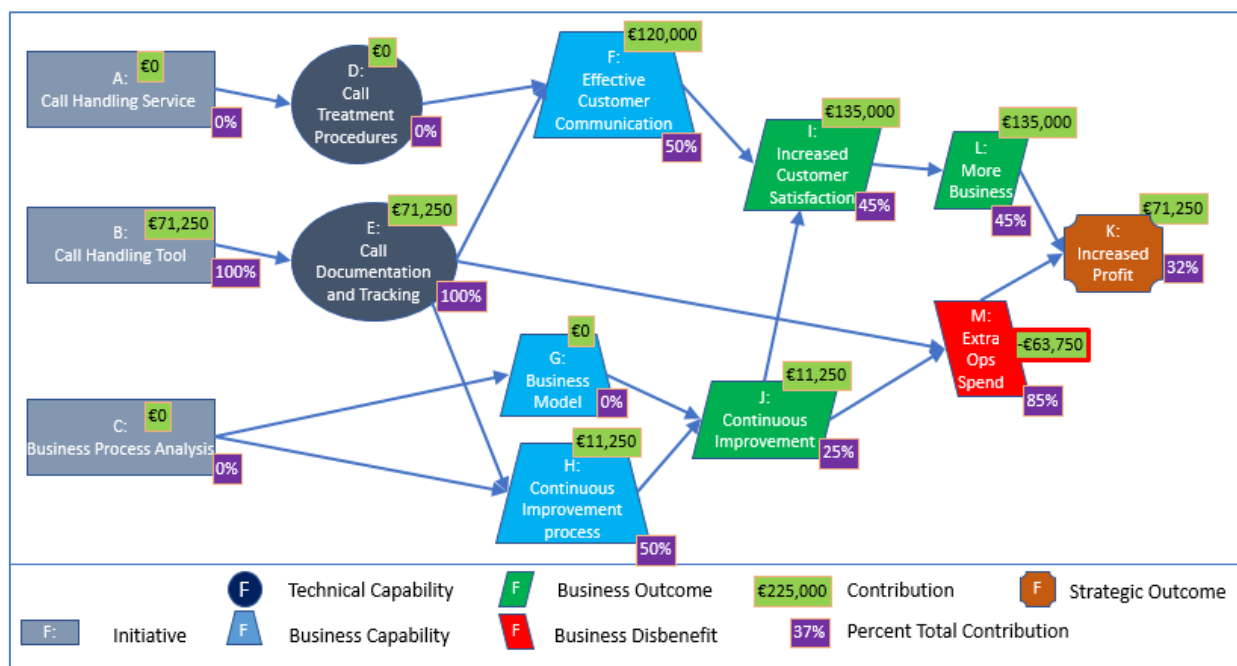

Figure 4: BEER Evaluation of the Contributions from the Call Handling Tool

Comparing the numbers in Figure 4 with those in Figure 2 shows for example that the call handling tool provides 50% of the total benefit of *Effective Customer Communication* (node F) – i.e. €120,000 compared with the total program benefit of €240,000 for that node. What may, however, be even more instructive for analyzing the approach embodied in the BRM for this sample program is to focus on the disbenefit at node M, (i.e., the *Extra Operational Spend*). The total disbenefit for the entire program has been given as €75,000. Figure 4 shows that the project to provide *Call Handling Tool* (node B) creates 85% (€63,750 / €75,000) of this loss. It should also be noted, as was discussed in the previous article and is shown in Figure 2, that node B = *Call Handling Tool* has a negative return on investment: its contribution is €71,250 for a cost allocation of €75,000 (ROI = −5%). This negative ROI is more easily understood in

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conjunction with the information from Figure 4 showing that this node generates – albeit indirectly – an additional (disbenefit) cost of €63,750.

This type of information can be extremely useful when deciding whether modifications should be made to the initial program approach – such as assessing the option of omitting the call handling tool from the program, in order to reduce the corresponding disbenefit. The argument in favour of this approach seems to be getting stronger.

However, there is at least one extra feature of programs that needs to be fully understood before any such major decisions can be considered.

This will be addressed in the next article in the series.

Key Points

The previous article described the Benefits Allotment Routine (BAR). This routine calculates the contribution to the strategic benefits, from right to left across the BRM, for each node of the BRM.

The current article completed the model by describing the Break Even Everywhere Routine (BEER) that is the converse of the BAR. The BEER distributes the allocations of the component projects, from left to right across the whole BRM. As shown schematically in Figure 5, to diffuse values from left to right, take the BEER; from right to left, use the BAR.

Two ways in which the BEER can be used to provide more detailed information about the structure and the progress of a program were described.

Figure 5: The Complimentarily of BAR and the BEER

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About the Author

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After many years managing international IT projects within large corporations, **Crispin ("Kik") Piney**, B.Sc., PgMP is now a freelance project management consultant based in the South of France. At present, his main areas of focus are risk management, integrated Portfolio, Program and Project management, scope management and organizational maturity, as well as time and cost control. He has developed advanced training courses on these topics, which he delivers in English and in French to international audiences from various industries. In the consultancy area, he has developed and delivered a practical project management maturity analysis and action-planning consultancy package.

Kik has carried out work for PMI on the first Edition of the Organizational Project Management Maturity Model (*OPM3™)* as well as participating actively in fourth edition of the *Guide to the Project Management Body of Knowledge* and was also vice-chairman of the Translation Verification Committee for the Third Edition*.* He was a significant contributor to the second edition of both PMI's Standard for Program Management as well as the Standard for Portfolio Management. In 2008, he was the first person in France to receive PMI's PgMP® credential; he was also the first recipient in France of the PfMP® credential. He is co-author of PMI's *Practice Standard for Risk Management*. He collaborates with David Hillson (the "Risk Doctor") by translating his monthly risk briefings into French. He has presented at a number of recent PMI conferences and published formal papers.

Kik Piney is the author of the book *Earned Benefit Program Management, Aligning, Realizing and Sustaining Strategy*, published by CRC Press in 2018

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