



Guide to Assist in Making Decisions Using the ProGrid[®] Methodology



The Power of ProGrid[®]

$$X_i = \sum_{j=1}^N a_{ij} f_j$$

ProGrid[®] Evaluates What Really Matters.

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Preface

The ProGrid® Methodology is designed to assist in:

- ❖ Making Decisions
- ❖ Evaluating Performance

You can use ProGrid® in any of the following Decision tasks:

- ✓ Evaluating and ranking grants and awards proposals
- ✓ Selecting among competing projects or alternative courses of action, when resources are limited
- ✓ Making procurement decisions
- ✓ The selection of technology commercialization partners
- ✓ Selecting applicants for positions in an organization, promotions and performance appraisals integrated into effective human resource management
- ✓ Scholarships for students and faculty members
- ✓ Selecting consultants
- ✓ Evaluating a consultant's performance
- ✓ Hiring staff
- ✓ Allocation of a "bonus" to participating partners
- ✓ Purchase of equipment
- ✓ Screening of requests for support by venture capital organizations
- ✓ etc.

You can use ProGrid® in any of the following Performance tasks:

- Benchmarking against competition
- Complying with regulations
- Measuring progress with respect to goals
- Evaluating personnel

ProGrid® will give you a competitive edge through:

- ✓ Rigour and Discipline
- ✓ Objectivity
- ✓ Transparency
- ✓ Consensus
- ✓ Time Savings
- ✓ Paper Trail

This Guide describes how to use ProGrid® to assist in making effective and supportable decisions.

ProGrid® has stood the test of time through user testimonials such as:

"We used your ProGrid® methodology for our entire Request for Proposal process to select management consultants for 27 separate contracts and it is fabulous! The selection criteria are clear, the vendors focus on providing exactly the information we need, and evaluating the proposals is easy and efficient. Not having to read through pages of sometimes irrelevant vendor material is a bonus for any procurement or contract manager. The software provides a variety of informative reports, a streamlined process, is cost effective and produces great results. I highly recommend this product."

See www.progrid.ca for other testimonials

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1. Designing Your ProGrid® Framework

This ProGrid® Applications Guide is designed to help you make an effective decision using the ProGrid® system that you have acquired. The first step is to lay out the task in a prescribed framework, which identifies and assembles all the critical factors and relationships.

1.1 Setting Up the Evaluation Matrix

Almost any decision process can be formulated as a matrix of the key decision factors, or criteria. In practice, the factors usually fall into three discrete categories – “Inputs”, “Enablers” and “Outputs” as illustrated in Figure 1. This is called the ProGrid® Evaluation Matrix. Inputs, Enablers and Outputs may be replaced by the terms in parenthesis in the table.

Figure 1 - The ProGrid® Evaluation Matrix

Column A Inputs (Resources)	Column B Enablers (Process)	Column C Outputs (Expected Outcomes, Results or Impacts)
Factors that represent the “givens”, such as the initial conditions and the resources available.	Factors that represent the activities or processes that can be used to convert Inputs to Outputs	Factors that represent the “desired outcomes”, such as economic, environmental or social impacts.

The columns in this matrix have a particular relationship to one another. Column A includes input factors that are given or specified, for example the initial intellectual property situation and the people and equipment resources available. Column C includes those factors that represent the outputs, for example the impacts desired from a decision to match stakeholder expectations. There are many factors that are neither inputs nor outputs and in ProGrid® terminology, are considered to be enablers. Examples of enablers are the processes or activities that can be undertaken to convert inputs into outputs. The specific factors to be included in the Evaluation Matrix depend on the decision task at hand; the “enablers” in some applications may be the “inputs” in others. Crucially, all of these factors must be user-defined in every evaluation application. None of them are established by ProGrid® methodology.

Columns A and C represent the “bookends” of the evaluation, outlining the starting points and the desired end points. They must be mathematically independent such that they can serve as the orthogonal axes in an evaluation grid.

The first step in using ProGrid® is to establish the Evaluation Matrix that fits the decision to be made. ProGrid® users have designed hundreds of different matrices, which have one theme in common; there is an interconnection of the columns with a flow from inputs/resources to outputs/outcomes, facilitated through enablers/processes.

The next section describes the process for establishing a ProGrid® Evaluation Matrix.

1.2 Defining the Factors

It is essential that all critical factors are included in the Evaluation Matrix, but only those factors that will drive the decision process. How many factors are needed and how are these developed? A usual exercise is to conduct a brainstorming session of those who are either to be involved in or affected by the decision. A skilled facilitator can draw out a list of Priorities, Values and Expectations, essentially what is the participants' view as the drivers for the evaluation. As many as 20 or 30 criteria may be identified as illustrated in the example shown in Figure 2. This list pertains to a new fund established to assist in the commercialization of research projects.

Figure 2 - Priorities, Values and Expectations

1. Project based on prior research
2. Responds to market opportunity
3. Achieves both intrinsic and financial values
4. Enhances science and business collaboration
5. Improves the health of citizens
6. Based on new indigenous intellectual property
7. More than just product development
8. Has strong regional attributes
9. Represents a new technical innovation
10. Activity will benefit the region
11. Potential for long lasting legacy
12. Broadens the horizons of scientists
13. Multidisciplinary
14. Has skills required for commercialization
15. Builds receptor capacity
16. Brings new funding into the region
17. Attracts top quality scientists
18. Has high scientific quality
19. Expands pool of skills
20. Facilitates wide consultation
21. Connects to worldwide experience.
22. Enhances a mentoring support network
23. A clear and identified market need
24. Potential for Intellectual property protection
25. Potential for additional competitive products
26. Potential for solid financial return to investors
27. Potential for defined returns to the region
28. Productive track record of investigators

The next stage is to group the criteria into common themes. An example of the grouping of the criteria in Figure 2 is provided in Figure 3. We now have nine groups representing the original 28 criteria. A descriptive name should be assigned to each group that represents the theme of that group. Don't throw away any individual criteria even if the fit to the group name is not perfect. These represent the values, priorities and expectations of the stakeholders and will be useful in preparing the metrics for the evaluation, as described later.

Figure 3 - Grouping the Values, Priorities and Expectations.

The Technology	The Enablers	The Impact
The Project 1, 18,7	Business Capacity 14, 15	The Market Need 2, 23, 25, 26
The Project Team 17, 28	Technical Collaboration 12, 13, 20, 21, 22	The Health Impact 5, 11
Intellectual Property 6, 9, 24	Commercial Partnerships 4, 14, 15,	The Regional Impact 8, 10, 16, 27

How do we know if we have the right number of grouped factors? Experience has shown that if there are less than 6 or more than 12, something is likely wrong. If there are less than 6, some of the factors may have too broad a span and be difficult to measure. If there are more than 12, there are two possibilities; factors are included that are not crucial to the evaluation, or there are a number of interlocking decisions that cannot be addressed at the same time or on the same scale. This latter can be handled in ProGrid® methodology by a process involving cascading matrices, in which there is a set of interconnected matrices, each having 6 to 12 factors. This is beyond the scope of this Applications guide.

Lowy¹ in his book “The Power of the 2x2 Matrix” notes that seven seems to be the maximum number of themes that can practically represent the issues involved in a decision process. He notes that more themes are often unhelpful.

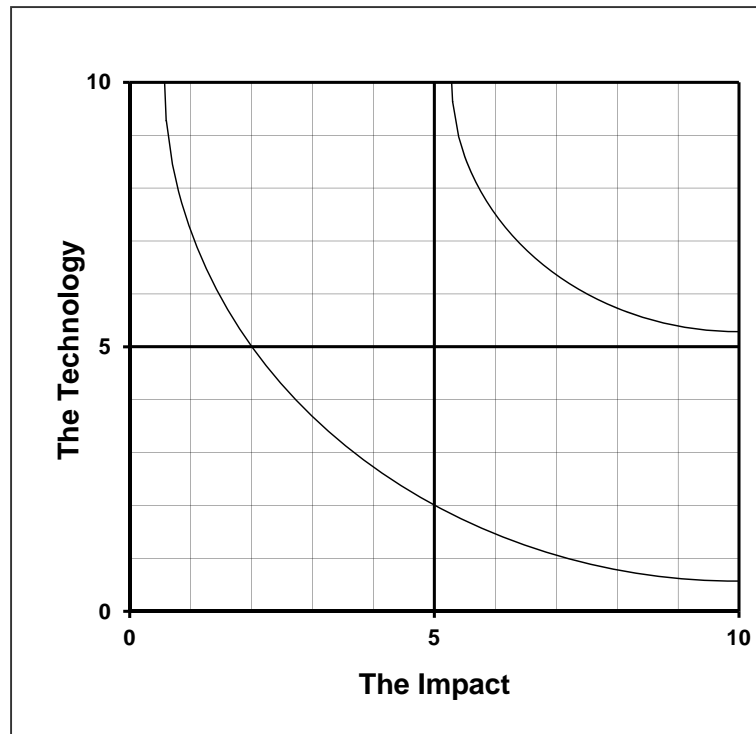
One of our clients, The Canada Foundation for Innovation initially had nine factors in their ProGrid® Evaluation Matrix and over a period of time found that they could reduce and consolidate the factors into six key factors that fully represented their decision boundaries.

1.3 Establishing the Grid

The results of a ProGrid® evaluation are shown in the form of a Positioning Grid as illustrated in Figure 4, based on the Evaluation Matrix shown in Figure 3. What are the appropriate axes for this grid? In most applications of ProGrid® methodology, the axes are best represented by the names of columns A and C in the Evaluation Matrix, namely the Inputs on one axis and Outputs on the other. Convention has settled on the Y and X axes for these respectively.

¹ The Power of the 2x2 Matrix, Alex Lowy, Phil Hood, 2004, Jossey-Bass (Wiley)

Figure 4 - Positioning Grid



Why use a grid for this purpose? And, more importantly, why use only two axes? In many cases where ProGrid[®] has been employed, the user has initially claimed that there are other critical issues that need to be included, and frequently a third dimension is suggested. ProGrid[®] theory permits the use of three dimensions, using a more complex algorithm and a cube for visualization purposes. In fact, any number of dimensions is possible, although they are less amenable to graphical representation and easy interpretation.

Why a preference for two axes? Many organizational management books have shown that companies are prone to fail if they have a one-dimensional strategy. For example, a strategy that relies on a single product eventually fails as the product reaches maturity. Focusing on the quarterly bottom line and neglecting long-term survival is another example of one-dimensional thinking. Expanding the horizon into two dimensions is a huge challenge for many organizations and represents a worthy goal. If a third dimension appears to be required, our experience to date has shown that the third dimension can be resolved into the initial two. But this may not be the final word on this issue!

How can you test if you have the right axes? If the above procedures are carefully followed, the chances of identifying the correct axes are fairly high. The names may need to be tweaked to fit particular nomenclatures or cultures. But there are tests that can be applied. The axes should be independent, in other words each can be achieved at least in part even if the other cannot. In the simple case of Inputs and Outputs, even though Inputs are put in place, the desired Outputs may not necessarily occur. If the axes are not independent, for example if there is a one-to-one to one relationship between the axes, the points would all fall on the diagonal of the grid. In practice, the application of ProGrid[®] methodology will normally allow points to fall in most regions of the grid, with some exclusion zones as will be described later.

The literature is replete with examples of four-box grids, representing a range of evaluation tasks. Lowy² has described 55 of these, and referred to them as 2x2 Matrices. His array of matrices is a comprehensive compilation of examples of tasks to which ProGrid[®] methodology can be applied. Lowy summarized the issue that all 4-box users have faced, in his instruction; “place yourself in one of the boxes”. Easier said than done.

This is the challenge that ProGrid[®] has addressed and solved since its initial applications in 1995, through the use of novel metrics, involving “Language Ladders[™]”.

1.4 Building the Language Ladders

Each cell in the Evaluation Matrix requires its own metric, or Language Ladder[™]. An early version of ProGrid[®] used a 10-point scale to measure the degree of adherence or progress. But users soon pointed out that one person's 7 may be very different from another person's. This led to the concept of defining *words to represent the scale, not numbers*. A ten-step language scale was found to be impractical. Some evaluation methodologies employ a two-point binary scale, such as used for compliance. An example is the evaluation of the safety of production environments. If two fire extinguishers are required per production area, you either meet the requirement or you don't. ProGrid[®] users have tested various scales, from three to five. The large majority of ProGrid[®] users now employ a four-step ladder.

The term “ladder” is useful and provides a good physical representation of the problem, as shown in Figure 5. This is a four-step ladder starting with A and progressing to D. Short sentences with key words should be used to express the intent of each step in this ladder. The sentences are constructed to fit the evaluation task at hand. However, the steps can be represented by the generic concepts expressed in Figure 5.

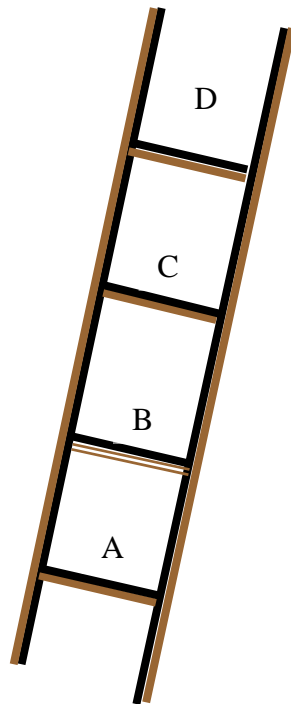


Figure 5 - The Language Ladder

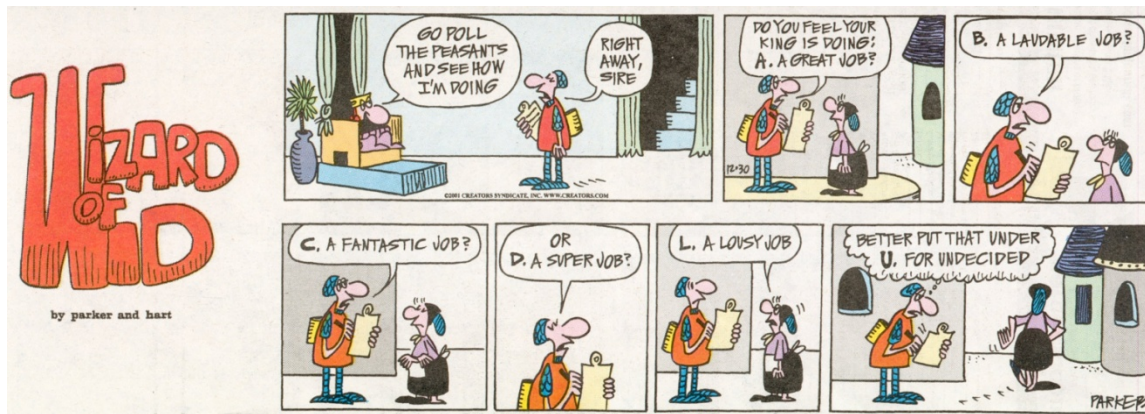
- A = none of the objectives in the matrix cell are met
- B = some of the objectives in the matrix cell are met
- C = all of the objectives in the matrix cell are met
- D = the objectives of the matrix cell are exceeded

² Op. cit.

It is frequently asked why ProGrid® starts the ladder at A and ends at D, which is the reverse of the terminology frequently used in academia. Starting a journey with A as the first step seems to be a logical trajectory, and permits the journey to be extended beyond D. The latter has been found to be a useful concept in personnel evaluations involving promotions.

The quality of the ProGrid® process depends initially on the correct structure for the Evaluation Matrix and then ultimately on the quality of the Language Ladder's design. The words used to describe the steps in the ladder should represent meaningful separation and be understandable by the evaluators. The values, priorities and expectations of the stakeholders, illustrated previously in Figure 2, will help in selecting the appropriate words and phrases. Figure 6 illustrates a set of Language Ladder statements that might be used in political polling. These statements are badly skewed and do not have sufficient content to clearly separate the steps.

Figure 6 - Language Ladder For Politician



Here is an example of set of Language Ladders appropriate for the Market Need cell in the matrix shown previously in Figure 3.

- A. The project responds to a potential market need, although prospects for a successful business venture are limited or unknown.
- B. The project will lead to a defined business opportunity based on a documented market need, with the potential for an acceptable rate of return to the proponent.
- C. The project will lead to a significant business opportunity, either creating a new market or successfully competing in an existing market. It has the potential to lead to a viable commercial venture with at least normally acceptable threshold rates of returns to the proponent and the funding organisation.
- D. The project will provide a platform technology that will open up an outstanding business opportunity, providing the ability to either create a new market or successfully compete in an existing market. It will lead to a successful commercial venture with well above average economic returns to the proponent and the funding organisation.

1.5 Selecting the Metrics

Once the Evaluation Matrix and Language Ladders have been established, the metrics for generating grid positions need to be defined. This is accomplished by defining a series of rating and weighting numbers, as follows:

Weights for the Evaluation Matrix Cells

Experience has shown that equal cell weights is the preferred approach, although there is nothing in ProGrid® methodology that would prevent a higher weighting being assigned to some cells. Unequal cell weights would add a confusing element in the evaluation of charts. If it is clear that some cells are more important, it is recommended that those cells be split into two or more components.

Axes Weights

These are numbers that distribute the influence of each cell to a particular axis. By convention, these are established by dividing unity into a fraction that apportions a cell to the X-axis and a fraction that apportions that cell to the Y-axis. These are user defined and have the following default settings:

Cells in Column A of the Evaluation Matrix - 0.0/1.0

Cells in Column B of the Evaluation matrix - 0.5/0.5

Cells in Column C of the Evaluation Matrix - 1.0/0.0

These default settings should not always be employed exactly as provided. Some of the Column A cells may have a small contribution to the X axis and the Column C cells may have a small contribution to the Y axis. The Column B cells will normally contribute to both axes, but may have a preferential influence on one axis. The Axes Weights should be established by reading the C level statements in the Language Ladder, and then assigning Axes Weights using the guide shown in Figure 7. (These values are illustrative and can vary from 0 to 1 in each case.)

Figure 7 - Assigning Axes Weights

X Axis	Y Axis	Significance of a “C” Rating
0.0 or 1.0	1.0 or 0.0	Achievement of a “C” rating will have its dominant effect on one axis of the grid with little or no effect on the other axis
0.2 or 0.8	0.8 or 0.2	Achievement of a “C” rating will have its major effect on one axis of the grid with a small, but recognizable, effect on the other axis
0.5	0.5	Achievement of a “C” rating will have an equal effect on both axes of the grid

Exclusion Zones

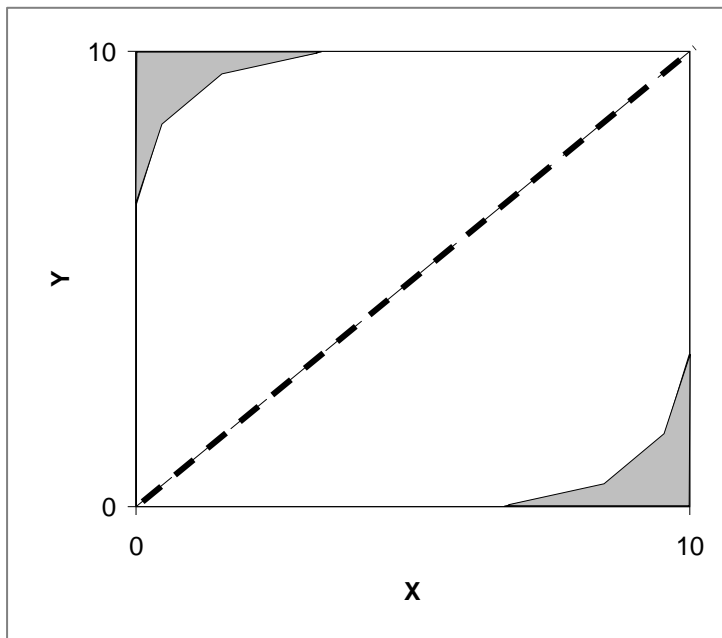
The axes weights determine the area of the performance grid that is accessible for a specific evaluation task. If all factors had 0.5/0.5 values, all points would fall on the diagonal of the grid. Consider a matrix with the set of axes weights shown in Figure 8.

Figure 8 - A Typical Set of Axes Weights

Column A	Column B	Column C
0/1.0	0.2/0.8	1/1.0
0/1.0	0.5/0.5	1/1.0
0/1.0	0.8/0.2	1/1.0

The exclusion zones for this matrix are shown in Figure 9.

Figure 9 - Exclusion Zones



The shaded areas in Figure 9 represents the exclusion zones which cannot be reached with the matrix and axes weights shown in Figure 8.

If the axes weights were all set at 0.5/0.5, the evaluation results would all appear on the dashed diagonal line.

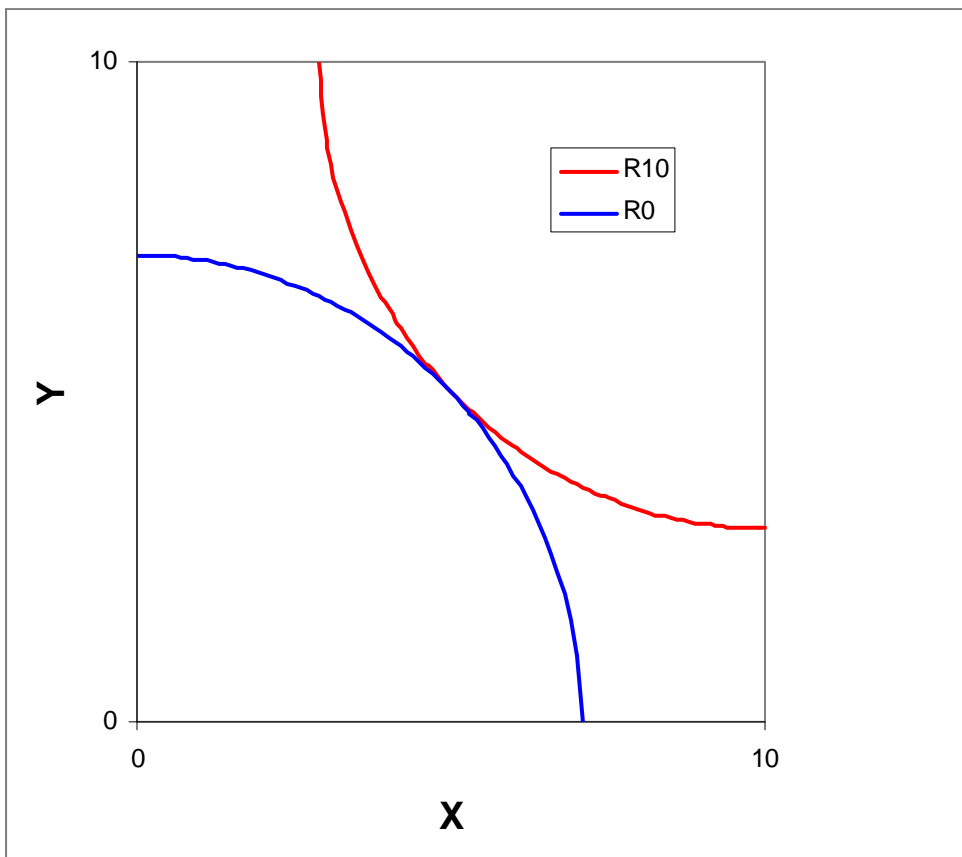
R-Values – The Ranking Scale

It is important to decide whether to measure progress in the grid from the origin (0,0) or from 10,10. Measuring progress from 0,0 provides credit for any movement in the grid, regardless of direction. This is appropriate, for example, in deciding on staff promotions, where an employee's strength may lie primarily in one dimension, and progress in that dimension should be rewarded. By contrast, a commercial technology-intensive venture may require progress in both axes and measuring the distance from the ultimate 10,10 goal is the appropriate metric. The difference between these approaches is illustrated in Figures 10. In ProGrid[®] methodology, grid travel is expressed as an R-value, which is the distance travelled from the point 0,0, or the distance to travel to the point 10,10, divided by the diagonal.

The R-values are expressed in percentages such that a grid position of 0,0 is equal to 0% and a grid position of 10,10 is equal to 100%, for both R_0 and R_{10} .

The two curves in Figure 10 both have R-values of 50%, and meet at 5,5. As the curves diverge from the diagonal, the difference between R_0 and R_{10} increases.

Figure 10 - Comparison of R values



2. Preparing the Software

The instructions that come with your specific ProGrid[®] software will explain how to prepare the Evaluation Matrix, the Language Ladders and the Metrics. Once this has been accomplished, your ProGrid[®] system will be ready for use. Several companion documents will be required as explained in the following sections.

2.1 Preparing an Application Form

A funding body that needs to choose a small number of opportunities from a larger number of candidate applications would normally prepare an application form to be completed by the person or organization applying for funds. This form provides the basis for an evaluation by the funding body and/or by independent reviewers. Two options are available for this application form. In each case the applicant completes the application form.

Option 1 - A customized form is prepared by the funding body, including a front section with basic information about the mandate of the funding body and space for inserting information about the Applicant, and a second section for the actual ProGrid[®] evaluation, including:

- The Evaluation Matrix
- The Language Ladders
- A self-evaluation section
- Space for justifying the self-evaluation

Option 2 - The more advanced ProGrid[®] tools generate a standardized application form which combines the “boilerplate” information and the evaluation sections in one form. The funding organization inserts appropriate information to customize the form for their use.

In both options, the self-evaluation and justification are important features of ProGrid[®] methodology. Experience has shown that these self-evaluations provide important information to assist the reviewers who perform the “independent” evaluation. In particular, the quality of the justification text gives the reviewers a clear perspective of the soundness of the Applicant ratings. ProGrid[®] users have noted that with this process, there is “no place to run, no place to hide”. An example of a typical self-evaluation section of the form is shown in Figure 11 for the Language Ladder shown previously in Section 1.4.

Figure 11 – Example of Self-Evaluation

<p>Market Need</p> <p>Please check which of the following statements best represents the current situation:</p> <ul style="list-style-type: none">A. The project responds to a potential market need, although prospects for a successful business venture are limited or unknown.B. The project will lead to a defined business opportunity based on a documented market need, with the potential for an acceptable rate of return to the proponent.C. The project will lead to a significant business opportunity, either creating a new market or successfully competing in an existing market. It has the potential to lead to a viable commercial venture with at least normally acceptable threshold rates of returns to the proponent and the funding organisation.D. The project will provide a platform technology that will open up an outstanding business opportunity, providing the ability to either create a new market or successfully compete in an existing market. It will lead to a successful commercial venture with well above average economic returns to the proponent and the funding organisation. <div style="border: 1px solid black; padding: 10px; margin-top: 20px;"><p>Please add comments to justify the statement that you have selected.</p></div>

2.2 Preparing the “Evaluator” Form

The user organization prepares a form for use by reviewers or evaluators, who might be members of the user organization, or external experts selected to provide independent advice. These “Evaluators” are asked to provide ratings for each cell in the Evaluation Matrix, and short comments regarding these ratings, and usually one or more overall comments. The user can customize a form for this purpose or use one generated by some versions of ProGrid[®] software. An example of the latter is shown in Figure 12.

2.3 Uploading Data

The rating information provided by the Applicant and the Evaluators should be transferred to the ProGrid[®] software. This is done manually in some ProGrid[®] software and electronically with the more advanced tools. Electronic upload is preferable when dealing with a large number of records, to avoid data-input errors, to save time and to enable real time output reports.

Figure 12 - Example of Evaluator Form generated by ProGrid® software

ProGrid-Venture Evaluation Program		ProGrid® Evaluation Form										
Opportunity Number:	<input style="width: 95%;" type="text"/>											
Proponent Name:	<input style="width: 95%;" type="text"/>											
Opportunity Name:	<input style="width: 95%;" type="text"/>											
Evaluator - please insert name:	<input style="width: 95%;" type="text"/>											
<p>When completing your evaluation please keep the following in mind:</p> <ul style="list-style-type: none"> > On the basis of the information provided, select one of the four statements (A to D) that you feel best describes the proposal and record your rating in the shaded box below the statements for each Criterion. Use only the letters (A, B, C or D). > If all the aspects of a statement are not fully met, select the statement immediately preceding it, e.g. if all the characteristics of a D statement have not been met, then select the C statement. > An A score does not mean automatic rejection and a D score does not mean automatic acceptance. > You may also add a short (~30 word, 255 characters max.) comment on each Criterion in the shaded comment box to the right of the rating's box. Comments should be constructive. Please be concise. > After you have completed your evaluation provide an overall comment on this proposal at the end of this evaluation form. > The comment boxes are spreadsheet cells; thus, if you want to insert a carriage return in your comments, use "Alt/Enter". If only "Enter" is pressed, the cursor will move out of the comment cell. > This form allows you to tab between cells that need to be filled. > You may want to check your spelling as the MS "Spell-Check" feature does not work with this form. > Please do not change any of the proposal information in the boxes above these instructions. > Thank you for using this form. It allows your evaluation to be automatically imported into the database. 												
<p>A1 The Commercial Advance</p> <p>Practice covers all products/processes/services that are commercially available. The descriptions of the level of advance on current commercial practice which you provide below are essential to the evaluation of the concept. The concept on which the Venture depends:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 5%; text-align: center;">A</td><td>Represents a small but measurable advance on current commercial practice.</td></tr> <tr><td style="width: 5%; text-align: center;">B</td><td>Represents a significant and recognizable advance on current commercial practice.</td></tr> <tr><td style="width: 5%; text-align: center;">C</td><td>Is a major advance on current commercial practice and will change the market dynamics in a significant way.</td></tr> <tr><td style="width: 5%; text-align: center;">D</td><td>Is unique and provides the basis for replacing existing products/processes/services, or the basis for providing new products/processes/services.</td></tr> </table> <p>Rating Comment on criteria</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;"><input style="width: 90%;" type="text"/></td> <td><input style="width: 90%;" type="text"/></td> </tr> </table>			A	Represents a small but measurable advance on current commercial practice.	B	Represents a significant and recognizable advance on current commercial practice.	C	Is a major advance on current commercial practice and will change the market dynamics in a significant way.	D	Is unique and provides the basis for replacing existing products/processes/services, or the basis for providing new products/processes/services.	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
A	Represents a small but measurable advance on current commercial practice.											
B	Represents a significant and recognizable advance on current commercial practice.											
C	Is a major advance on current commercial practice and will change the market dynamics in a significant way.											
D	Is unique and provides the basis for replacing existing products/processes/services, or the basis for providing new products/processes/services.											
<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>											
<p>A2 Competitive Advantage</p> <p>Competitive advantage may arise from proprietary know-how, trademarks, copyrights or an enforceable patent position. On the other hand competitors may be able to satisfy the market with products/processes/services that are based on different concepts. Please describe below not only the nature of the advantage you hold, but also your assessment of the strength and longevity of this advantage.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 5%; text-align: center;">A</td><td>Competitors will be able to respond with their own version of the concept, and customers will be able to easily switch between competing offers.</td></tr> <tr><td style="width: 5%; text-align: center;">B</td><td>Competitive advantage will be based on first to the market" and high switching costs will maintain this advantage."</td></tr> <tr><td style="width: 5%; text-align: center;">C</td><td>Competitive advantage will initially be based on first to the market" and this advantage will be extended by expected proprietary strengths, such as patents, trademarks, copyrights, protected trade secrets etc."</td></tr> <tr><td style="width: 5%; text-align: center;">D</td><td>Competitive advantage is based on existing strong proprietary strengths, such as issued patents, trademarks, copyrights, protected trade secrets etc and these will provide protection from competition for at least 10 years.</td></tr> </table> <p>Rating Comment on criteria</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;"><input style="width: 90%;" type="text"/></td> <td><input style="width: 90%;" type="text"/></td> </tr> </table>			A	Competitors will be able to respond with their own version of the concept, and customers will be able to easily switch between competing offers.	B	Competitive advantage will be based on first to the market" and high switching costs will maintain this advantage."	C	Competitive advantage will initially be based on first to the market" and this advantage will be extended by expected proprietary strengths, such as patents, trademarks, copyrights, protected trade secrets etc."	D	Competitive advantage is based on existing strong proprietary strengths, such as issued patents, trademarks, copyrights, protected trade secrets etc and these will provide protection from competition for at least 10 years.	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
A	Competitors will be able to respond with their own version of the concept, and customers will be able to easily switch between competing offers.											
B	Competitive advantage will be based on first to the market" and high switching costs will maintain this advantage."											
C	Competitive advantage will initially be based on first to the market" and this advantage will be extended by expected proprietary strengths, such as patents, trademarks, copyrights, protected trade secrets etc."											
D	Competitive advantage is based on existing strong proprietary strengths, such as issued patents, trademarks, copyrights, protected trade secrets etc and these will provide protection from competition for at least 10 years.											
<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>											
<p>C3 Market Competition</p> <p>Your assessment provided below of who represents the competition and how their competitive strengths relative to theirs is essential in order to assess the potential for success in the market. The nature of the competition provided by this concept:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 5%; text-align: center;">A</td><td>Will face major competition from well-established companies that have existing products/processes/services competing for the same market.</td></tr> <tr><td style="width: 5%; text-align: center;">B</td><td>May not face immediate competition but established companies will quickly develop and offer competing products, processes or services.</td></tr> <tr><td style="width: 5%; text-align: center;">C</td><td>Will have a 'window of opportunity' to achieve a sustainable market position before competition responds with equivalent products/processes/services.</td></tr> <tr><td style="width: 5%; text-align: center;">D</td><td>Will face only weak or limited competition for the foreseeable future.</td></tr> </table> <p>Rating Comment on criteria</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;"><input style="width: 90%;" type="text"/></td> <td><input style="width: 90%;" type="text"/></td> </tr> </table>			A	Will face major competition from well-established companies that have existing products/processes/services competing for the same market.	B	May not face immediate competition but established companies will quickly develop and offer competing products, processes or services.	C	Will have a 'window of opportunity' to achieve a sustainable market position before competition responds with equivalent products/processes/services.	D	Will face only weak or limited competition for the foreseeable future.	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
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<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>											
<p>C4 Financial Returns to VC</p> <p>Venture capital investors typically expect returns on their investment of a minimum of 30% compounded annually from the time of investment to the time when their investment is returned. This means, for instance, that an investor would expect to at least double their investment after three years. Equally important to the investor is that you present a clear picture of how and when the investment can realistically be returned - through what it called an exit strategy".</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 5%; text-align: center;">A</td><td>Commercialization of this concept is unlikely to provide minimum acceptable venture capital rates of return.</td></tr> <tr><td style="width: 5%; text-align: center;">B</td><td>Commercialization of this concept will likely provide acceptable venture capital rates of return of 30% but it is uncertain whether the investor will be able to "realize" that return within 2 years."</td></tr> <tr><td style="width: 5%; text-align: center;">C</td><td>Commercialization of this concept will likely provide acceptable venture capital rates of return of 30% with the potential that the investor can 'realize' that return within 2 years.</td></tr> <tr><td style="width: 5%; text-align: center;">D</td><td>Commercialization of this concept has the potential to yield exceptional rates of return of 50% or more with the strong likelihood that the investor can 'realize' that return within 2 years.</td></tr> </table> <p>Rating Comment on criteria</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;"><input style="width: 90%;" type="text"/></td> <td><input style="width: 90%;" type="text"/></td> </tr> </table>			A	Commercialization of this concept is unlikely to provide minimum acceptable venture capital rates of return.	B	Commercialization of this concept will likely provide acceptable venture capital rates of return of 30% but it is uncertain whether the investor will be able to "realize" that return within 2 years."	C	Commercialization of this concept will likely provide acceptable venture capital rates of return of 30% with the potential that the investor can 'realize' that return within 2 years.	D	Commercialization of this concept has the potential to yield exceptional rates of return of 50% or more with the strong likelihood that the investor can 'realize' that return within 2 years.	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
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<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>											
<p>Overall Comments on the Proposal (200 - 225 words, 1500 characters max.):</p> <div style="border: 1px solid black; height: 100px; width: 100%;"></div>												

2.4 Beta Testing

It is highly recommended that a beta test be carried out on your ProGrid® system before it is used in a “live” request for proposals. Beta testing will provide evidence on the validity of the structure of the matrix, the understandability and separation of the steps in the Language Ladder, and a reality check of the results and graphical interpretation. The beta test could be done using applications from a prior competition or by asking potential future applicants to participate in an advanced trial, preliminary to the future full competition.

3. Generating Reports

Once the data has been entered into the ProGrid[®] software reports are generated automatically. The more advanced ProGrid[®] software includes multiple user-customizable reports, which can be designed for specific reporting purposes, such as:

1. For feedback to the Applicant
2. For detailed analysis and database comparisons
3. For management overview

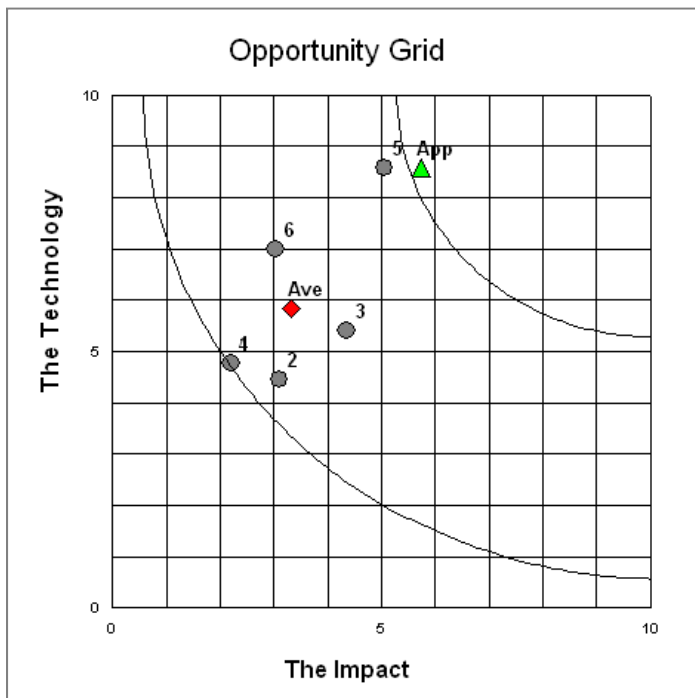
The reports can include the following components.

- Description of the evaluation task
- Evaluation Matrix
- Opportunity Grid
- Profile chart of strengths and weaknesses
- Comparison with a database
- Degree of consensus of evaluators
- Raw data summary, permitting adjustments to the ratings when desired

3.1 Opportunity Grid

The Opportunity Grid is one of the key outputs from the ProGrid[®] process, as illustrated in Figure 13. This shows an evaluation of a decision task by six evaluators, showing their individual data and the average of their opinions, for the Evaluation Matrix shown previously in Figure 3.

Figure 13 - Opportunity Grid

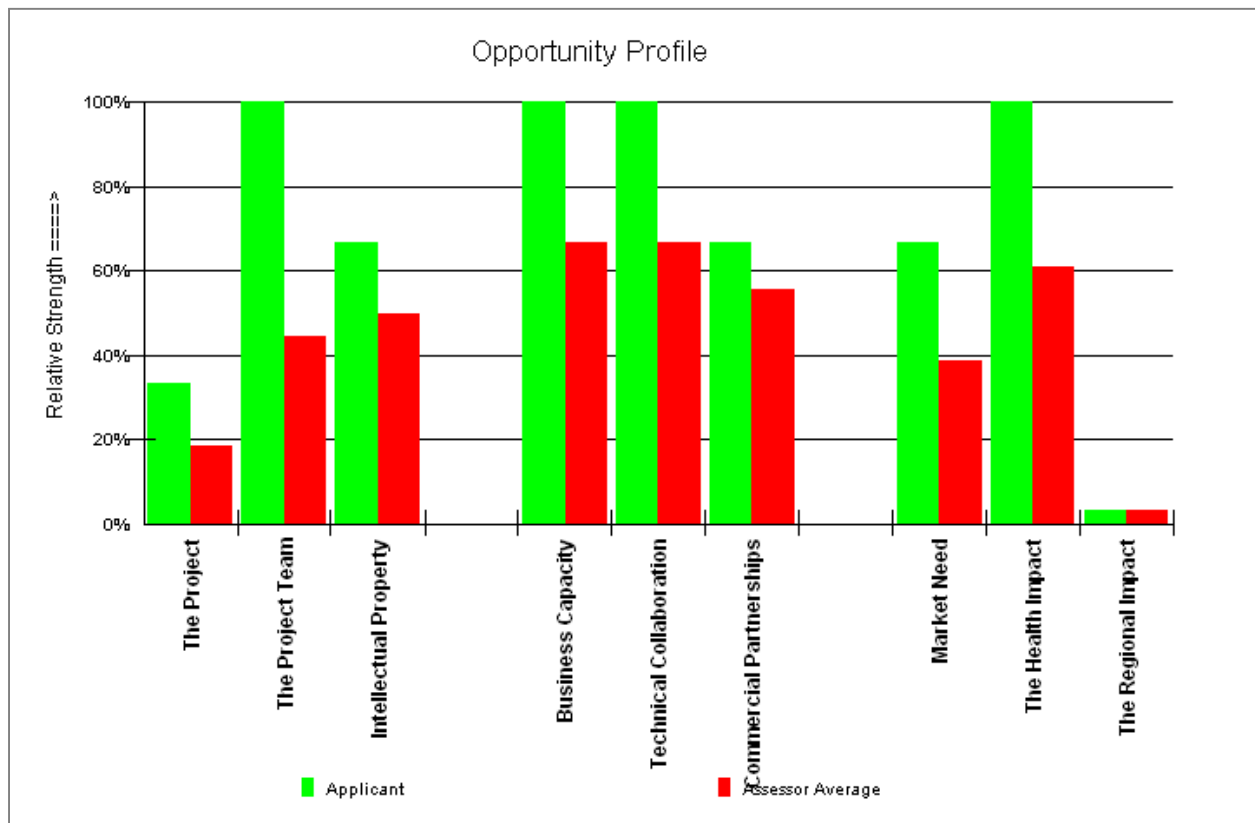


The rating of the Applicant (App) is compared with the rating of six evaluators in this grid. Five of the evaluators have relatively consistent opinions about the Opportunity, with an average rating for all evaluators shown as Ave. The Applicant and Evaluator 5 believe that the technology is stronger than the other evaluators. A higher “technology” rating by the Applicant is a common occurrence, and probably reflects an over-estimate of the maturity of the technology. The perspective of Evaluator 5 would be an important issue to discuss before making a final decision on this Opportunity

3.2 Profile of Strengths and Weaknesses

The profile chart shown in Figure 14 provides additional rich information to guide the decision process. The bars on this chart represent the strengths and weaknesses of the individual cells in the Evaluation Matrix shown previously in Figure 3. The shape of the profile by the Applicant and the Evaluators is relatively consistent, with the three middle bars (Enablers) stronger than either the left three bars (The Technology) or the three right bars (The Impact). The potential for a significant Health Impact and a reasonable Intellectual Property strength might encourage the funding organization to help correct some of the apparent weaknesses.

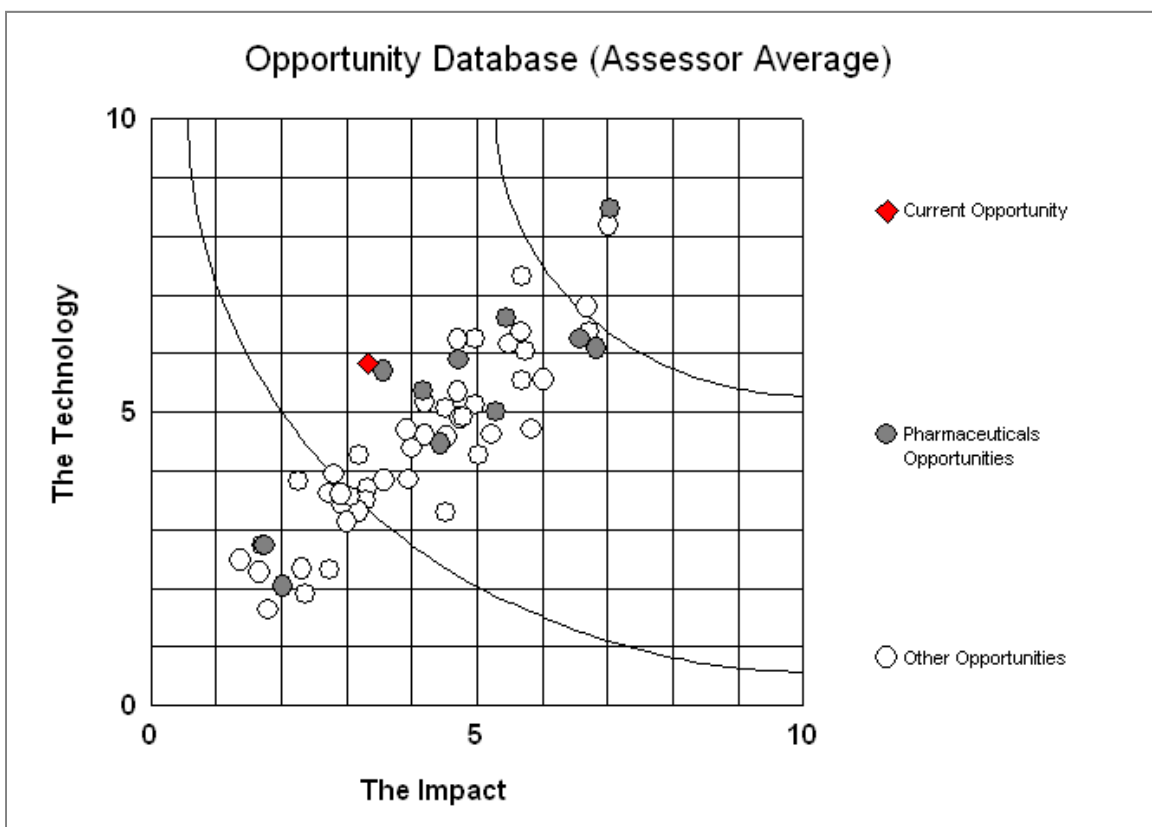
Figure 14 - Opportunity Profile



3.3 The Database

A funding decision always comes down to the selection among alternatives, as illustrated in the database chart shown in Figure 15. This grid permits a management group to quickly reach a consensus on those evaluations to be accepted and those to be rejected, and allows attention to be focused on those decisions lying near the “cut off point”. The current opportunity shown in Figures 13 and 15 is identified as a diamond, and is “in the middle of the pack”, possibly near the cut-off point. Having a relatively high technology rating might mean that it will be approved. The ProGrid[®] software permits the grouping of applications by sector to help focus the decision process.

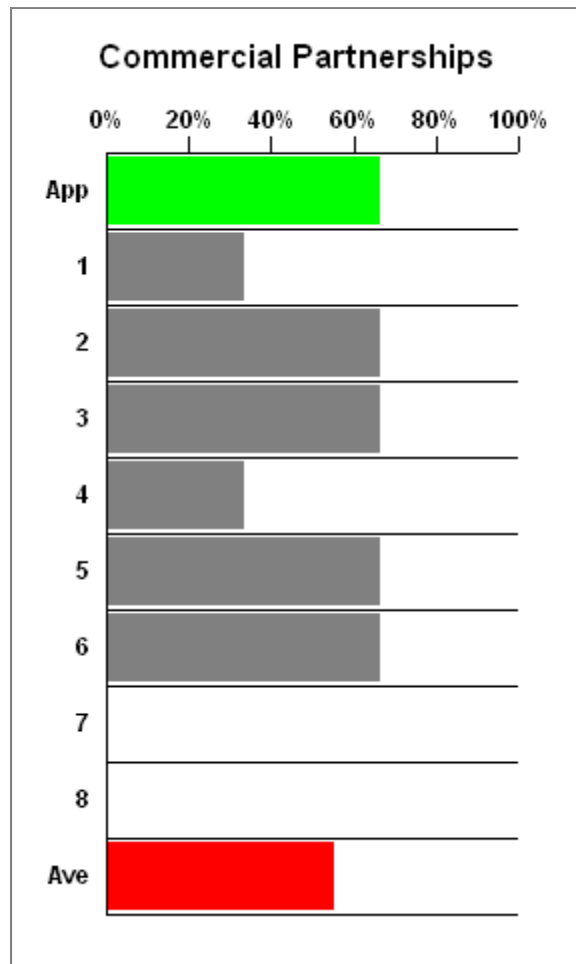
Figure 15 - Opportunity Database



3.4 Evaluator Variance

The variance among Evaluators noted in Figure 13 can be further explored by examining the ratings for each cell in the Evaluation Matrix. The variance for Commercial Partnerships, Figure 16, shows there is a high level of agreement among the Evaluators and with the Applicant. There would be little need to discuss this area when working towards a decision.

Figure 16- Evaluator Variance

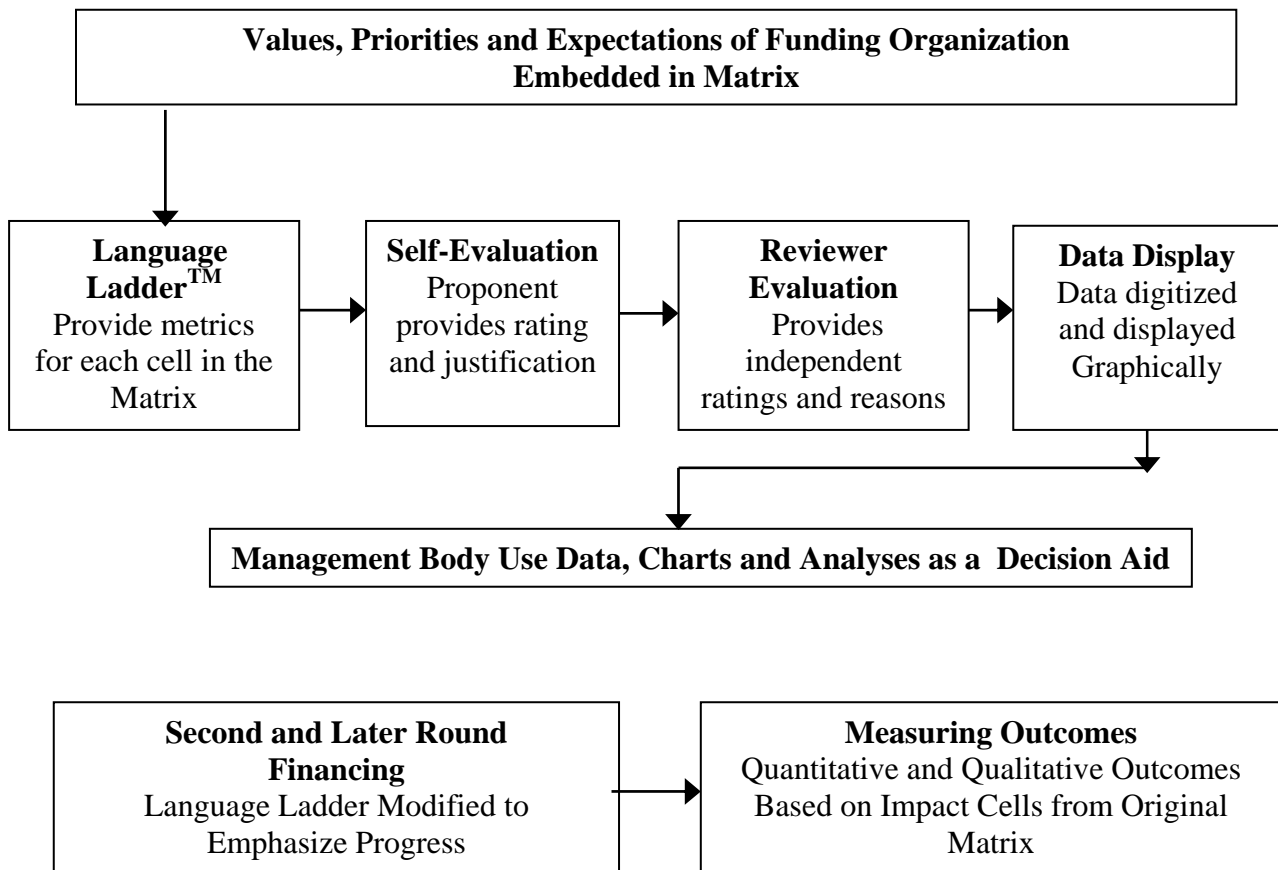


4. Making Decisions.

Taking action on the results of an evaluation is highly specific to the task at hand. Figure 17 illustrates a typical process, starting with the preparation of an Evaluation matrix, and ending with a management meeting to review results and make decisions. The lower part of this figure illustrates how ProGrid[®] can be used in post-decision evaluations.

Organizations that use the ProGrid[®] evaluation methodology to assist in decision making will normally establish a management committee or panel to review each application and make either the final decision or a recommendation to be considered by a higher-level body. In some cases, the committee will consist of the group who undertook the original reviews. In other cases, the committee may be composed entirely of individuals who have not been involved in the review process. It is desirable that the committee receives the ProGrid[®] output reports in advance of the committee meeting.

Figure 17 - The Decision Process



Some competitions may have only a small number of proposals and the committees involved may decide to review each proposal in either the order submitted or some other arbitrary order. The

Chairperson will normally develop a protocol compatible with the number and nature of applications.

There is no single method for making the final decisions/recommendations, but the following is one approach where the number of applications is large and where funds are limited. The Committee would have both the Opportunity Grid (such as Figure 15) and an R-value Sort table (such as shown in Figure 18) to divide the applications into three groups, with a dollar cut-off point around \$2 million (Figure 18 is a subset of 60 Applications).

Group 1- Highly Rated Applications

Group 2- Applications that border on the budgetary cut-point

Group 3- Applications that are significantly below the budgetary cut point

Group 1 proposals are considered in order of the R-value ranking, determining if there are any significant differences among the Reviewers in any performance factor. If not, budgetary or other concerns of any Committee member should be raised and considered. After this process, a consensus should be sought about funding the proposals in this group.

Group 2 proposals may require more effort. As for Group 1, differences among Reviewers should be identified and discussed. In addition, the sensitivity (potential for future changes) in the project should be assessed. The likelihood that current weaknesses can be readily corrected should be addressed. Any fatal flaws should be identified. After this discussion, it should be feasible to either confirm the current relative position of the proposal or to shift it upwards or downward in the seriatim. Reviewers may wish to change their rating during the discussions as new information is presented. Such changes can be recorded in the software during the meeting, with immediate changes in the R-value rankings shown on the screen.

Group 3 proposals can be considered in an open discussion, in which a Reviewer may challenge the weak position and present views contrary to the average Reviewer evaluation. Examples that fall in this category would be proposals that have singular strengths that might warrant funding on a "prospective" basis.

Figure 18 - Sorting Applications by R-Value

Opportunity No.	Theme	X	Y	R- Value	\$k	Cum. \$k	
11	Pharmaceuticals	7.04	8.47	76.4%	\$347	\$347	Group 1
3	Medical Res. Tech.	7.02	8.18	75.3%	\$160	\$507	
31	Medical Device	6.69	6.79	67.4%	\$112	\$619	
47	Medical Device	6.73	6.38	65.5%	\$114	\$733	
45	Pharmaceuticals	6.84	6.09	64.4%	\$168	\$901	
49	Medical Device	5.69	7.32	64.1%	\$124	\$1,025	
15	Pharmaceuticals	6.58	6.24	64.1%	\$56	\$1,081	
48	Health Informatics	5.68	6.36	60.0%	\$126	\$1,207	
42	Pharmaceuticals	5.45	6.6	59.9%	\$77	\$1,284	
36	Health Informatics	5.74	6.05	59.0%	\$75	\$1,359	
4	Health Informatics	5.49	6.17	58.2%	\$126	\$1,485	
12	Health Informatics	6.02	5.55	57.8%	\$82	\$1,567	
5	Medical Device	5.69	5.54	56.2%	\$126	\$1,693	Group 2
39	Medical Device	4.97	6.25	55.7%	\$76	\$1,769	
18	Medical Res. Tech.	4.71	6.24	54.1%	\$107	\$1,876	
21	Pharmaceuticals	4.72	5.89	52.7%	\$227	\$2,103	
29	Medical Res. Tech.	5.84	4.71	52.4%	\$225	\$2,328	
19	Pharmaceuticals	5.29	5.01	51.5%	\$57	\$2,385	Group 3
40	Non-Drug Therapy	4.97	5.13	50.5%	\$127	\$2,512	
9	Health Informatics	4.7	5.35	50.2%	\$97	\$2,609	
20	Health Informatics	5.23	4.61	49.1%	\$57	\$2,666	
28	Medical Device	4.79	4.92	48.5%	\$155	\$2,821	
34	Medical Device	4.75	4.9	48.2%	\$123	\$2,944	
27	Medical Res. Tech.	4.52	5.07	47.9%	\$126	\$3,070	
23	Non-Drug Therapy	3.8	5.8	46.8%	\$90	\$3,160	



5. Future Pathways

This Applications Guide provides the framework for getting started in using the ProGrid® methodology, using procedures that have been tested by users for over a decade. Building from this framework, many effective pathways are open for improving decision-making. The developers of ProGrid® methodology have been impressed by the novel ways that users have extended the power of the tools that they have acquired.

Here are examples of ways that the basic ProGrid® methodology has been extended.

- Forecasting future performance with a built in expert system
- Tracking performance over time
- Building scenarios and measuring potential impacts

If you are interested in learning more about these extensions, contact any of the ProGrid® practitioners listed at www.progrid.ca.

