Evaluation Matrixes: The good, the bad, and the ugly

"The more I use a matrix, the easier I make it to blame someone else."
Mark V. Hurd[1]

Introduction

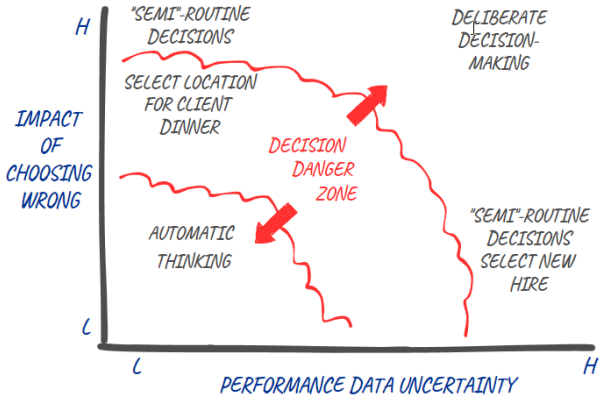
This material augments chapter 6 from the book *W.I.S.E. Choices at Work*.

If you have not read the book, W.I.S.E. choice happens when:

- The decision maker **Weighed** the downside of the choice to put the upside in perspective.
- The decision maker has been **Informed** by those who will use the choice.
- The decision maker has considered the **Sufficient** characteristics for choice to succeed.
- The decision maker identified how to make the choice **Effective**.

Some quick reminder background

When we have more than two options, an evaluation matrix provides a great framework for helping us make a W.I.S.E. Choice. The diagram below shows that we face challenges when the options have a high level of uncertainty for the performance data or high impact if we choose wrong. We must pay extra attention when using an evaluation matrix to make semi-routine and non-routine decisions. This means we must leverage the good of the matrix while avoiding or at least managing the bad and the ugly. Because if Mark V. Hurd, the author of the quote above, knows how to use it for blame, then you can bet that others might too.



[1] Former Co-CEO of Oracle.

Evaluation Matrix Basics

"*If it doesn't matter who wins or loses, then why do they keep score?*"
Vince Lombardi[2]

The basic Evaluation Matrix mechanics

Creating an Evaluation Matrix requires four steps.

1) Gather the options to create the top row.
2) List the criteria for making the choice.
3) Score the performance for each option using a 1-10 scale with 10 scoring the best.
4) Total up the scores to select the winner.

Using the example from the book of evaluating new hire candidates, the matrix looks like the table below.

Evaluation Characteristics	**New Hire Candidates**			
	Sam	**Finley**	**Harper**	**Morgan**
Work Experience				
Oral Communication Skills				
Written Communication Skills				
Problem Solving Skills				
Total Score				

Simple framework

This sample has 4 options and 4 criteria. This means we have 16 sets of performance information to collect. Once we have gathered all the data, we create the 1-10 scores and tally up the total scores to identify the winner. Very objective. The matrix below shows the matrix with scores.

[2] Former coach of the American Football Green Bay Packers.

Evaluation Characteristics	New Hire Candidates			
	Sam	Finley	Harper	Morgan
Work Experience	*5*	*10*	*5*	*8*
Oral Communication Skills	1	7	10	5
Written Communication Skills	*10*	*7*	*8*	*3*
Problem Solving Skills	*3*	*8*	*10*	*3*
Total Score	*19*	*32*	*33*	*19*

The "Good" of an Evaluation Matrix

"*A good beginning makes a good end.*"
Louis L'Amour[3]

Introduction

An evaluation matrix provides decision makers with process to follow and a way to document their decision.

Provides a framework for discussion

The framework of the matrix provides the ability to discuss the options objectively. We have the chance to define what success looks like. Here we identify we want a new hire to have Work Experience, Oral Communication Skills, Written Communication Skills, and Problem-Solving Skills. We might discuss other characteristics, like a particular degree or specialized knowledge of a software platform.

Creates a record of the decision

Creating the matrix provides a built-in record of the information used to make the decision. We can use the documentation to use conduct an After-Action Review of the decision that is mentioned in Chapter 8 of the book.

Weeds out non-winners with minimal partiality

Right now, we know Harper has the top score of 33. We know that Sam and Morgan, with total scores of 19, scored well below this. Thus, we can easily eliminate them from additional consideration. A challenge arises when we look at second place Finley, who only missed the top score by 1 point. That starts us to look at the bad parts of the evaluation matrix.

[3] American author.

The "Bad" of an Evaluation Matrix

"*Good judgment comes from experience, and experience comes from bad judgment.*"
Rita Mae Brown[4]

Introduction

Even with a simple example, we can spot limitations of the evaluation matrix. With some planning, we can overcome the limitations of using the matrix. I will highlight the shortcoming and then how to overcome it. Let's start with the scoring.

Challenge: Numerical information with no supporting information

The table below summarizes the results of the original evaluation matrix.

Sam	Finley	Harper	Morgan
19	32	33	19

Harper wins with 33 points. Decision done. Time to move onto other pressing work, right?

Even with generic names of people you don't know, you might want to know just a bit more about *silver medalist* Finley who only lost by <u>one</u> point. Sam and Morgan clearly lost. But Finley came soooo close. You can imagine people lobbying to change scores. And, if Finley was <u>my</u> favorite candidate, you can bet on heavy lobbying for adjusting the scores.

This purely mathematical approach draws attention to some limitations to the approach. The matrix helps weed out non-winners, but we need more than arithmetic to choose the winner. Of course, we have the step of asking about the downside, which means we could pick someone other than Harper. Having said this, once people have a number in their head, we may struggle to displace this winning designation.

[4] American writer.

Solution (Part 1): Clarify the desired performance to provide context for the numbers

For the *Written Communication Skills* characteristic, Finley scored 7 points while Harper received 8. Why? How? Non-routine decisions will typically have subjective evaluation characteristics. This opens the door for fuzzy ratings. We can do better.

A useful framework for defining evaluation criteria follows this format:

> Any alternative we select will be/do/create/cause [*fill in the characteristic*] as measured/demonstrated by [*fill in the measurement system*].

Let me illustrate this by using this written communication skills job requirement. (I will put the fill in words in *italic*.)

> Any candidate we hire will *write clear, concise reports* as demonstrated by *taking less than one hour to write a short report using raw data we provide*. (We will provide this during the interview versus having them submit a sample that may or may not be their writing.)

Writing out the characteristics and measurement allows us to think through what we really want. No doubt we can tweak the measures once we know what we want to see. Note: We must create a scale to measure the quality of the report. We need to know how we would create a score for the report's quality. Of course, evaluation will have some subjectivity. But we might consider using the editor algorithms offered by Microsoft and other platforms. These can provide a consistent evaluation to augment the human assessment.

Take the time to have the performance and measurement discussions before you start evaluation. You might have to talk about how you conduct the interview if you have a new-hire decision. If you have to decide on a career move, then you will have to think through what makes job challenging or worth getting out of bed for. Take time to think of what you truly need or want for any 'winning' option.

Solution (Part 1): Understand WHY you want the character-istic

Albert Einstein said. "Not everything that can be counted counts and not everything that counts can be counted." Many non-routine, but important, decisions will have characteristics that matter but, as Einstein suggests, can't be counted. In his book *How to Measure Anything: Finding the Value of Intangibles in Business*[5], Douglas Hubbard provides a method to do the necessary counting. Basically, if we understand why we want to measure something, we can create measures that work. So, I like to change Einstein's quote to say that "Not everything that counts can be **easily** counted."

Applying this to the example's *Work Experience* characteristic will illustrate how to use this technique. If I ask why is work experience

[5] *How to Measure Anything: Finding the Value of Intangibles in Business. Wiley. 2007. ISBN 9781118983836.*[

needed, then I might hear something like the candidate should know about the world of work and won't require much learning curve. The characteristic now looks like this:

> Any candidate we hire will *know how to work in a mid-sized organization* as demonstrated by *providing examples of how they successfully navigated a cross-functional situation and influenced without authority*.

Note that the two measures may require asking two interview questions.

Challenge: Lots of scoring work to do

The new hire example had four options with four characteristics, resulting in 16 cells to score. What if we had 10 options and 10 characteristics? The number of scoring cells expands to 100. How can we manage this effectively?

Solution: Start decisions more deliberately

Just because you use an evaluation matrix does not mean you will make a W.I.S.E. choice. To use Deliberate Decision Making effectively, you must clarify the decision's purpose based on the need or want to do something. For example, when you have an opening, you may need to hire.

From this need, you create a decision statement. The simplest decision statement format is:

> Pick X [type of option].

The decision statement for the new hire matrix we have used so far might be:

> Select marketing department new hire.

Using the words marketing department helps you focus on the criteria you need. Note: The accounting department might have different requirements.

Finding the right words for the decision statement helps create a common starting point. It will also provide ideas for the characteristics that a successful option needs.. The table below provides some examples and commentary. We can't designate any decision statement as correct without knowing more about need. Sometimes we need to look at lots of options. Creating different decision statements can help find one that works. This will help you look at an appropriate number of options.

Note: We can check if we have the right starting point when we list possible options. If we have a high number and start feeling uncomfortable, then we might have to tighten our wording.

Decision Statement Example	Positive	Negative
Select a vehicle	Three words, short and sweet.	The generic term vehicle may provide too many options.
Select a truck	Also, short.	We have now narrowed down the type of vehicle to **truck**. As a result, now we can't consider sedans, minivans, and SUVs. This may or may not be okay.
Select a white truck	Still on the short side.	Who decided it was going to be white!? Why?
Select a white Ford truck	This is about maximum length with three modifiers.	Preselecting the color and manufacturer may be problematic *unless* we have a corporate purchasing agreement with Ford, and we have a fleet of white trucks that this truck needs to match.

Challenge: Not enough difference in scores

With the new hire matrix example, we could see the difference between the top two candidates and the bottom two. Harper's 33 and Finley's 32 are nearly twice as high as Sam's and Morgan's 19. The scoring works especially well when we use the idea of defining the performance clearly and creating the measurement system. The challenge comes in with discerning (or believing?) the one-point difference between Harper and Finley.

Solution: Incorporate a weighting system for the character-istics

The current example matrix treats all characteristics as equal. We might determine that some characteristics have more importance than others. The characteristic with more importance would have a higher weight and create more differentiation. Typically, a 1-10 scale provides a good way to weight the characteristic's importance.

Suppose the hiring team determined they valued problem-solving as most important. They decided that work experience mattered least. The weights for the characteristics look like the following table.

Characteristic	Weight
Work Experience	3
Oral Communication Skills	5
Written Communication Skills	7
Problem Solving Skills	10

With these weights, the scores look like the table below. Non-winners, Sam with a total weighted score of 120, and Morgan with 100, no longer have tie scores. Harper's lead grows to 27 points over second

place Finley. The weighting system created differentiation. But does that mean Finley is the W.I.S.E. choice? That leads to discussing the ugly parts of an evaluation matrix.

Evaluation Characteristics		***New Hire Candidates***							
		Sam		Finley		Harper		Morgan	
	Weigh t	Score	Weighte d Score	Score	Weighte d Score	Score	Weighte d Score	Scor e	Weighte d Score
Work Experience	3	5	15	10	30	5	15	8	24
Oral Communi-cation Skills	5	1	5	7	35	10	50	5	25
Written Communi-cation Skills	7	10	70	7	49	8	56	3	21
Problem Solving Skills	10	3	30	8	80	10	100	3	30
Total Score		19	120	32	194	33	221	19	100

The "Ugly" of an Evaluation Matrix

"*The great tragedy of science - the slaying of a beautiful hypothesis by an ugly fact.*"
Thomas Huxley[6]

Introduction

We need evaluation matrixes for many important decisions. This means understanding the flaws to use the matrix effectively. I will highlight the ugly aspects and provide some solutions.

Challenge: The matrix says *THIS* one is the winner

As I mentioned in the previous section, when we score options, barring a tie at the top, we have a *winner*. The reality is that we have only identified options that don't win. In the case of new hires, we know that Sam and Morgan underperform against our characteristics. When we used no weighting, Harper had a one-point lead over Finley. With weighting, this margin increased to 27. Clearly a winner, right? Well…

Solution: Use your judgment

If the quantification of a total score works for decision making, then we would just use spreadsheets for all decisions. No thinking required, just populate the matrix, and the decision pops out. Before you agree,

[6] English author.

consider this. If I 'play' with the weighting on the new hire matrix and make *Work Experience* as most important, Finley becomes THE winner.

Of course, we have to look at the downside step of deliberate decision making to help us make a W.I.S.E. choice. The score provides us with the upside. Now we must identify the downside. I recommend selecting the top two options regardless of score. This will help us avoid thinking we have the high-score winner as the only option. Evaluate the downside along with the actions to prevent or mitigate each option compared with the benefit gained from each option. This will help you make a W.IS.E. Choice.

Challenge: We can't quantify things perfectly

I regularly use evaluation matrixes with my clients. Having said this, matrixes can create a false sense of security. I have already shown the limitations of the spreadsheet calculations and the manipulation that can occur. In addition, the strictly numerical approach assumes that all the performance criteria have accuracy and precision in the measurement. Consultant, speaker and decision-making expert, Annie Duke[7] says that we rarely account for the chance that bad luck will occur. (And yet we invoke Murphy's Law on a regular basis!) In addition, when we identify the downside, we talk about likelihood, *not* certainty, of occurrence. We also can only estimate the level of impact.

The best articulation of the downside of relying solely on an evaluation matrix comes from Nobel Laureate Herbert Simon[8]. In 1979, during his acceptance speech, he outlines how it is almost impossible to make rational decisions with these words.

To make a rational decision, we must:

- Know **everything** about all the alternatives.
- **Compute the consequenc**es that would occur from each of the alternatives if chosen.
- Establish the certainty of the consequences.
- Compare the consequences in a **consistent quantitative manner**.

Note: Emphasis added.

Solution: Accept that failure can occur despite your best intentions

Essentially, the odds of us having 100% of the necessary information AND the information being 100% correct AND having the ability to predict the consequences perfectly AND then calculating a numerical value for the consequence approaches ZERO.

We get close to this level of analysis when selecting a mobile phone provider. But we won't for making semi-routine and non-routine decisions like choosing a career or new product idea. Thus, we must

[7] https://www.annieduke.com/
[8] https://pubmed.ncbi.nlm.nih.gov/14584993/

use judgment. Or, as Simon concluded, *we must supplement rational decision making with bounded rationality*.

This means that we cannot ignore the uncertainty or wish it away. We must embrace this and develop strategies for addressing:

- The challenges of incomplete and potentially imperfect information.
- The need to evaluate semi-quantitative information.
- The probability of the option being wrong.

This may mean that assessing the downside of an option provides the most insight into what the W.I.S.E. choice will be.

The Evaluation Matrix's Caveat Emptor[9]

"I think there's a yin and a yang
to everything."[10]
Chris Claremont[11]

Closing thoughts

I used the quote above because the evaluation matrix has a duality of providing benefit while also providing downside when not used properly. Many things have this dual nature. Fire in a fireplace provides warmth. If not contained, it creates damage. This whitepaper should provide you with techniques to get the benefits from using an evaluation to make a W.IS.E. Choice while avoiding or at least minimizing any downside.

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[9] a principle in commerce: without a warranty the buyer takes the risk
https://www.merriam-webster.com/dictionary/caveat%20emptor
[10] The yin-yang philosophy says that the universe is composed of competing and complementary forces of dark and light, sun and moon, male and female.
https://www.thoughtco.com/yin-and-yang-629214
[11] English author.