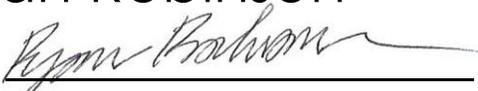


Specificity Matters: How Nominalizations and Passive Verbs Hinder Function Analysis

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Abstract

The philosophy of authors to use very colorful, vivid words to describe situations in literature parallels what value practitioners do on a day-to-day basis, especially during the Function Analysis Phase.

However, there are hindrances to Function Analysis. These hindrances come in the form of nominalizations and passive verbs.

It could be asserted that the level of attention to extremely specific verbs and nouns is “merely semantics” or “just word games”. However, if practitioners wish to grow the industry and foster the value culture, then these subtleties matter. These matter because every project is unique and every project has unique functions. If these unique, specific functions are not identified and understood by the team, it will affect all phases before and after the Function Analysis Phase, and ultimately, the results of the study will suffer.

In order to improve Function Analysis and ultimately improve the usefulness of study results, practitioners must spend more time on the Function Analysis Phase and must learn to ask more specific questions about the functions identified by the team. Not only must practitioners ask more questions, but they must learn to ask *the right* questions. This takes time and practice, but the outcomes are much more impactful to the industry. Function Analysis is what sets the Value Process apart from any other creative or analytical processes. If practitioners can improve their Function Analysis, then the Creative Phase will result in more innovative ideas. This will result in better outcomes of the study and, ultimately, a greater demand for the use of the process throughout the country.

SPECIFICITY MATTERS - HOW NOMINALIZATIONS AND PASSIVE VERBS HINDER FUNCTION ANALYSIS

Introduction

“It was a cold grey day in late November. The weather had changed overnight, when a backing wind brought a granite sky and a mizzling rain with it, and although it was now only a little after two o'clock in the afternoon the pallor of a winter evening seemed to have closed upon the hills, cloaking them in mist.”

The previous text is an excerpt from Daphne du Maurier’s book *Jamaica Inn*. The author uses very colorful, vivid words to describe the weather outside. When authors describe situations, they use active descriptive words to identify what they are talking about. There is an immense amount of detail in such concise statements. This philosophy parallels what value practitioners do on a day-to-day basis with Function Analysis.

The cornerstone of the Value Methodology, in many practitioners’ opinions, is Function Analysis. Function Analysis is what allows the team to gain a greater understanding of the project, product, or process at hand. This step in the process is where many teams gain the “Aha!” moment that comes from new insight and understanding of *what* must be accomplished. While Function Analysis creates the opportunity for this insight to occur, it is not always achieved. This can be due to many factors, such as complexity of the project, how well the information phase went, experience of team members in VE, etc. The most common cause of ineffective Function Analysis, though, is the use of nominalizations and passive verbs when expressing functions.

A nominalization is “a type of word formation in which a verb or an adjective (or other part of speech) is used as (or transformed into) a noun” (Nordquist). For example, resistance (from resist) and applicability (from applicable) are both examples of a nominalization converted from a verb to a noun and from an adjective to a noun, respectively. As a general rule, most *-ity*, *-tion*, and *-ance* words are considered nominalizations.

Passive verbs are another trap that practitioners can fall into. While these verbs are still sometimes considered active verbs, they may not be descriptive enough for the particular project, product, or process being examined. Using these words may create a superficial understanding resulting in a less productive Creative Phase. These words will be addressed in more detail later.

Nominalizations

As stated before, nominalizations are verbs or adjectives that have been converted to nouns. “One of the reasons nominalizations make reading tedious is that they are “heavy” words. They force the reader to pause and consider the meaning, which quickly becomes mentally fatiguing” (Action Verbs Good. Nominalizations Bad). In the context of Function Analysis, this can delay the team’s thinking, causing momentum to be lost.

Also, allowing nominalizations during Function Analysis can hinder the critical thinking process because they are “feel good” words. In other words, these words elicit good feelings from the team members. Words like quality, efficiency, safety, freedom, etc. are all examples of nouns that make the team feel good. As such, they are not challenged by the team because to do so would suggest you are somehow against quality or safety or freedom.

During the Function Analysis Phase, one will certainly hear these terms thrown carelessly around and some of them will, as a result of their ability to mean something different to everyone involved, resonate with the team. A common function that teams commonly jump to is to Improve Safety, safety (from the adjective, safe) being the nominalization. But what is safety? How one person defines safe may not be the definition the person next to them is thinking of. Yet, this function resonates with the team because it creates an image in their mind based on their interpretation of a safe situation. This may be a fence around a house, for example, or it could be a police officer standing guard. The thinking behind this function is if the team has made this facility safer, then everyone should be happy. However, this is not specific enough for the purposes of Value Engineering; practitioners must dig deeper.

Examples of Common Nominalizations

Functionality

This happens to be one of the most common nominalizations, because it is so cliché. This is usually used in the function of *Improve Functionality*. This function will certainly fill the team with that warm, fuzzy feeling in their stomach because achieving this function is the whole reason that they are there! Teams often believe the sole purpose of a value study is to improve the way a project, product, or process functions. Hearing this function, however, should sound like nails on a chalkboard to practitioners. The reason for this reaction is simple: what *specifically* is functionality? The dictionary definition of functionality is “the quality of being suited to serve a purpose well”. Unfortunately, this definition does not provide the team with much insight. By SAVE International’s® definitions, a function must contain a measurable noun, and functionality cannot be measured. If the noun is not specific, then one is left with an abstract definition of “what this project, product, or process must do”.

So, the question must be asked in a different way. What is that function that is improving by this project? What specifically is improving in the way this project functions? Posing this question differently to the team can result in different results. For instance, a practitioner may now begin to elicit answers such as, “the function that is improving is an aesthetic one; we are trying to make the building more pleasing to visitors’ eyes” or “we are improving the speed in which we get pieces through the assembly line”. These answers will lead the team further into the specific functions of the project rather than stopping at an abstract function.

Efficiency

Efficiency is another nominalization that practitioners must be careful to avoid. Like functionality, the most common function associated with efficiency is *Improve Efficiency*. This function may be perfectly applicable in certain scenarios, but, generally speaking, it is an indeterminate function. Practitioners must resist tripping over this roadblock in the team’s thinking process. If the team is not pushed past this function, then the goal of Function Analysis may not be accomplished.

Once again, the practitioner must pose the question, “what *specifically* is efficiency?” By definition, efficiency is “the ability to do something or produce something without wasting materials, time, or energy”.

This definition is useful for understanding what may be meant by efficiency but when the project being studied is a building or something with many components, this function may need to be more specific. What about the efficiency is improving? Is the project increasing the architectural efficiency? Is the project improving the energy-capturing efficiency? Once these questions are posed to the team, a deeper understanding of what the project must do will be gained.

Quality

Online reviews, for example on Amazon.com, are a good way for customers to determine how well a product performs. However, all of these reviews are subjective and dependent on the application of the product. For example, a particular product may have some five star ratings and some a one star rating; but, how can these differ so much if it is the same product being reviewed? These reviews will help determine the “*quality*” of the product. In fact, the definition of *quality* as an adjective per Merriam-Webster is actually “very good or excellent”. These words should sound familiar as they typically correspond to a four or five star rating on review web pages. So, one could assume that these reviews are a good way to determine the *quality* of the product.

The same can be said for any project, product, or process. The *quality* of the project is completely subjective. The mention of this word should prompt a practitioner to examine this further. What determines the *quality* of the product and from whose perspective is this *quality* being measured? Common functions that contain this nominalization are *Improve Quality*, *Provide Quality*, and *Enhance Quality*. Examining these functions further, one can see that quality is really an adjective and not a noun.

For example, the function *Improve Quality* sounds incomplete like there should be an enhancer. Of course, this function can be modified in such a way that it says *Improve Aesthetic Quality* or *Improve the Quality of Aesthetics*. It can also be modified to say *Improve Service Quality* or *Improve the Quality of Service*. By asking some of the questions stated above, the team may arrive at these answers, resulting in different, more specific functions than just *Improve Quality*.

List of Common Nominalizations

The following table is filled with examples of common nominalizations. For many practitioners, these words will be very common. Many times these words are “good enough” to get the team thinking, but it is important to remember the real intent of Function Analysis. The real intent is for the team to discuss (external processing), not just think (internal processing).

Freedom	Hope	Illustration
Safety	Love	Intelligence
Elegance	Flexibility	Issue
Quality	Applicability	Functionality
Performance	Failure	Difficulty
Value	Innovation	Knowledge
Wisdom	Experience	Success

Resolution

The underlying theme of functions that contain nominalizations as nouns is that they are very high order. The best way to counter a team’s persistence on using nominalizations is to go back to the basics of FAST diagramming: ask the team how is the project doing that? How is the project improving the efficiency on this building? How is the project improving the quality of this product? These questions will help the team gain a deeper understanding of the project, product, or process being examined.

By spending more time on Function Analysis, probing the team with more targeted questions, and by not settling for those feel good functions, practitioners can gain more from the Function Analysis Phase. This will translate into a better, more precise Creative Phase and, ultimately, better outcomes of the Value Study.

Passive Verbs

Is there really such a thing as a bad verb? The answer is a matter of opinion, but some verbs are better at describing the action that is taking place than others. Think about an author, for example. When authors describe situations, they use vivid, active words. Think about the following verbs:

- Run
- Talk
- Yell
- Laugh
- Jump
- Eat

All of these verbs are commonly used in everyday situations. By using a different set of verbs, authors are able to better describe exactly what they mean, to make the reader feel like they are in the story. An author may choose to use these words instead:

- Scamper
- Chatter
- Scold
- Chuckle
- Leap
- Devour

By simply changing the verb, the reader will gain a greater understanding of the activity that is taking place.

This exercise may seem superfluous, but it enhances the idea that the wording and semantics during the Function Analysis Phase can make a difference in the communication during the study and the outcomes, as well. Although this concept stems from creative writing, there is no doubt this concept can be used during Function Analysis to communicate the functions more clearly.

Examples of Passive Verbs

Provide

One of the most unacceptable verbs throughout the industry is the word *provide*; yet, many practitioners continue to use it during Function Analysis. The real issue with using this verb is that it is non-specific.

Take *Provide Access*, for example. This function is not nearly specific enough to determine exactly what must occur in the project, product, or process being studied. What kind of access, and for whom is this access being provided? These questions may make sense in the context of the study, but many of the users of the Function Analysis product (program managers, project managers, Value Engineering representatives, etc.) do not have the benefit of being in the context of the workshop. If the Function Analysis product is to be used as a communication tool, then it must make sense to all parties who will use it.

Provide Access often appears in the context of transportation studies. This is a common function in transportation projects as there is often a need to provide access to an interstate or some other roadway for vehicles or across the street for pedestrians. Readers of the Function Analysis product will not understand the context of this function unless they participated in the workshop. If, instead, the function identified is *Access Interstate*, then the function is clearer. Taking this one step further, if the function identified is *Access Downtown*, then there is a clear understanding that the project needs to get pedestrians/vehicles into the downtown area. In this instance, it is unclear whether the project is providing this access to pedestrians or vehicles which may require the use of an enhancer (third word) for specificity.

Another common use of the verb *provide* is in an activity disguised as a function. This can be a tricky function to deal with as a practitioner. However, as a practitioner, it is vital to recognize these functions. Say, for instance, the team generates the function *Provide Loading Area*. To resist using this function, the practitioner must ask the question why. Why does the project need to provide a loading area? When in doubt, use the basics of FAST diagramming to talk the team through the functions and the How-Why logic path.

Many times in Value Studies with inexperienced teams this word can be very prevalent. However, provide is a very easy verb to counter. The best way to counter this function is to convert the noun, like support or access in the examples above, into a verb. This may seem extremely simple, but simply digging deeper and asking that different question may bring the team to a new understanding and result in better outcomes of the Value Study.

Accommodate

Another common verb used during the Function Analysis Phase is *accommodate*. Many individuals who are not familiar with Function Analysis and the Value Process will gravitate to this word during the function discussion. Unfortunately, this verb results in very cursory functions. For example, the function *Accommodate People* is common to see in studies. This function actually has a couple of issues with it. Let's begin with the verb, *accommodate*. This is a very passive verb. In most circumstances the project is not actively attempting to *accommodate* anyone or anything. The project, instead, is actively doing something specific to *accommodate something specific*. Practitioners must determine what exactly is being done to accommodate that specific something. Once the activity is identified, the question becomes why. Generally, this activity is done because a function using *accommodate* is much higher order. The team must get down to the activities taking place in the project to really get to the functions that must be accomplished. Visually, this looks like the diagram below.

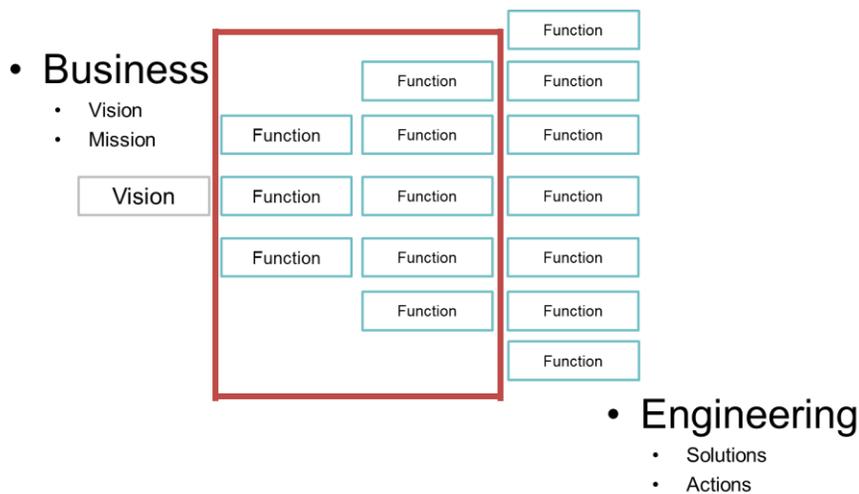


Figure 1. Graphic Representation of a FAST Diagram illustrating the focus of a Value Study

The real insight to the project comes from the two columns of functions within the red box. *Accommodate People* will typically lie in the first column (labelled *Vision*). Although this function is not exactly a “Vision” of the owner/client, it will typically be an *All the Time Function* or a *Design Objective*. When the team is questioned about how specifically that is happening in this project, most team members will jump to the solutions of the project, such as *Supply Chairs, Install Ramps (for ADA)*, etc. These functions will lie in the right-most column as activities or actions. This is where the practitioner can bring the team to a middle

point by asking the question why. Why is this project supplying chairs? Or why is this project installing ramps? These questions will generally lead to the red-boxed functions that practitioners should seek.

The second issue with this function is the noun of people. For the purposes of a Value Study, people is not measurable or specific enough. The practitioner must probe the team to gain a greater understanding of what people the project is actually accommodating. People could be co-workers, maintenance staff, pedestrians, etc. This must be vetted out during Function Analysis; otherwise, there may not be a clear understanding of what the project must do. Using these techniques and questioning the team further can result in more specific functions. For instance, beginning with Accommodate People as a function can lead to a discussion of comforting the people and, further, into a discussion of *Comfort Visitor* or *Seat Visitor*.

List of Common Passive Verbs

The following is a list of passive verbs that are commonly used on Value Engineering studies.

Practitioners should avoid the use of these verbs, and they should use some of the questions stated previously to dig deeper into what specifically does this project, product, or process do.

Provide	Allow	Accommodate
Apply	Use	Produce
Be	Create	Make
Prevent	Meet	Avoid
Assure	Facilitate*	Improve*

*These words can be used; however, they should be used sparingly

Example Questions

To summarize the questions stated above into a concise list, view the following table. These are just some examples of questions that practitioners can ask to help mitigate weak functions.

- What do you mean by (nominalization)?
- What *specifically* are we (verb) on this project?

- What *specifically* must we do to (function)?
- How *specifically* do we accomplish this function in this project?
- Let's try to change that noun into a verb. Instead of *Provide Support*, what are we supporting?
- Why do we need to provide (noun)?
- How *specifically* are we *Accommodating* (noun)?
- Why must we (answer from above question)?

As stated before, most functions that contain nominalizations are higher order functions. To get the team back to where the focus of the Value Study should be, practitioners must ask the question “how”. A good rule of thumb for this process is to ask the 4W’s (what, where, who, when) and 1H (how). The following diagram is a good starting tool to ask more targeting questions:

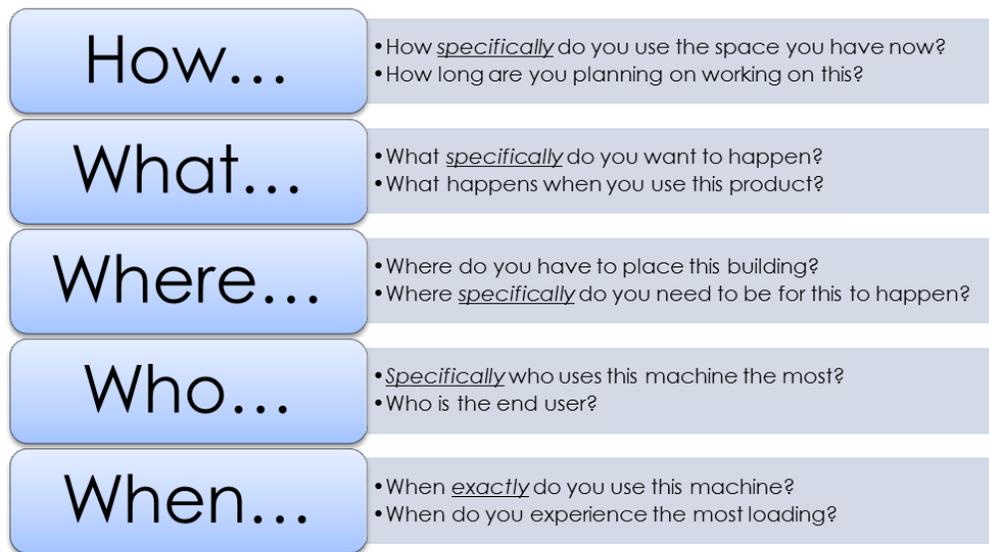


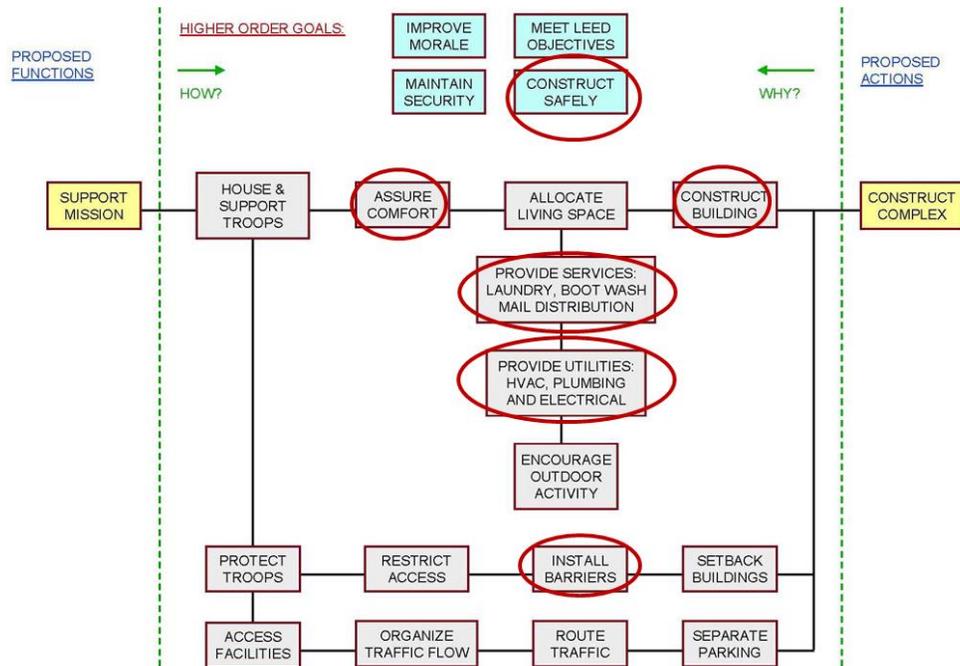
Figure 2. Diagram for Effective Questioning (per Jeff Rude, CVS)

Asking these basic questions can help get the team to a different perspective and lead to more discussion which is the real goal of Function Analysis.

Public FAST Diagrams

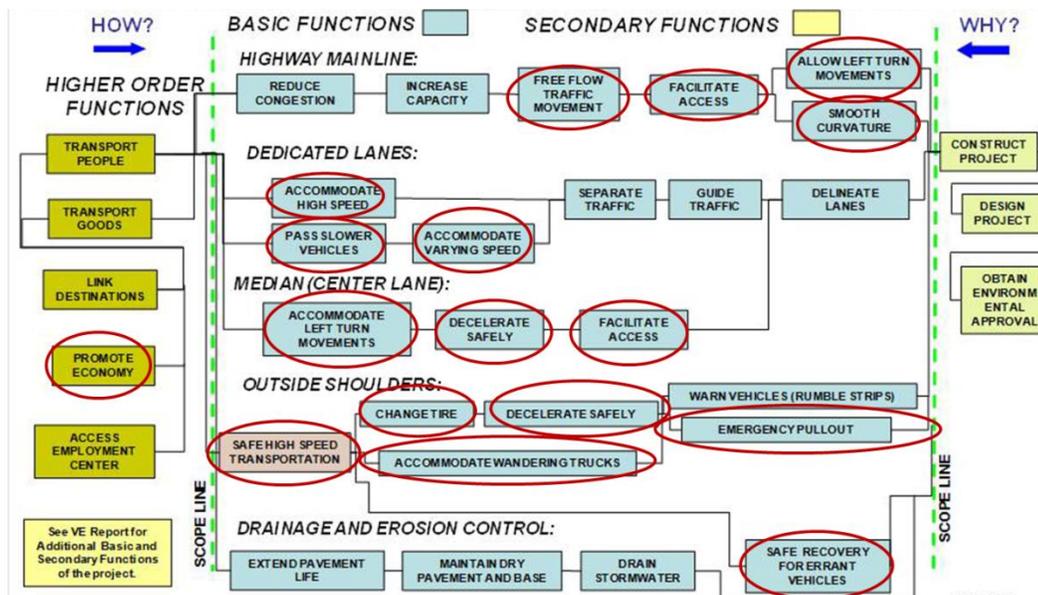
Practitioners throughout the industry continue to use the words mentioned in this paper. Unfortunately, unless the industry identifies examples of exactly where these occur, there will be no advancement. The

diagrams below are actual public FAST diagrams that contain some of these cursory functions. These functions, specifically, contain nominalizations and passive verbs. These FAST diagrams were done by certified practitioners. For privacy purposes all information regarding practitioner, client, etc. have been excluded. The red circles on these diagrams indicate some of the obvious cursory functions.



Although these functions may make sense in the context of the study, there may be better functions to use. For instance, instead of the function *Assure Comfort*, the function could be modified to say *Comfort Troops* or *Comfort Occupants*. Additionally, there are some functions identified that are actually activities (*Construct Building*, *Install Barriers*) which should have been vetted out during FAST Diagramming. The function *Construct Safely* is actually a verb/adverb combination and not a verb/noun combination. Again, practitioners should recognize these issues and deal with them in the proper manner during the Function Analysis phase when the subject matter experts in the room can help identify the specifics.

Here is another example of a FAST diagram done by a certified practitioner:



There are numerous cursory functions circled on this particular FAST diagram. Many of the functions that have been identified are actually *verb/adverb* or *adjective/noun* combinations (e.g. *Smooth Curvature*, *Free Flow Traffic Movement*, *Decelerate Safely*, *Emergency Pullout*, *Safe Recover for Errant Vehicles*, *Safe High Speed Transportation*), which violates the definition of a function (active verb/measurable noun). Also, in many cases the word *accommodate* is used as the verb in these functions (e.g. *Accommodate Left Turn Movements*, *Accommodate High Speed*, *Accommodate Varying Speed*, *Accommodate Wandering Trucks*). Instead of using these functions, the practitioner must ask the question “what *specifically* is happening in this project to *accommodate* _____?” This will lead the team to more project-specific functions.

Other functions that are indicated by red circles on this diagram are actually activities. For instance, the functions of *Pass Slower Vehicles* and *Change Tire* are not actually functions of the project itself. In this case, the roadway project is not passing slower vehicles or changing tires. An experienced practitioner should identify these with the team and these should be targets for discussion to gain greater understanding of the unique function.

Conclusion

It could be asserted that this level of attention to extremely specific verbs and nouns is “merely semantics” or “just word games”. However, if practitioners wish to grow the industry and foster the value culture, then

these subtleties matter. These matter because every project is unique, and because every project is unique, every project has unique functions. If these unique, specific functions are not identified and understood by the team, it will affect all phases before and after the Function Analysis Phase, and ultimately, the results of the study will suffer.

In order to improve Function Analysis and ultimately improve the usefulness of study results, practitioners must spend more time on the Function Analysis Phase and must learn to ask more specific questions about the functions identified by the team. Not only must practitioners ask more questions, but they must learn to ask *the right* questions. This takes time and practice, but the outcomes are much more impactful to the industry. Function Analysis is what sets the Value Process apart from any other creative or analytical processes. If practitioners can improve their Function Analysis, then the Creative Phase will result in more innovative ideas. This will result in better outcomes of the study and, ultimately, a greater demand for the use of the process throughout the country.

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