3 FIXES TO FIX YOUR FIX-IT MEETINGS

By Frank Vicidomina, PE, CVS-Life

3 FIXES TO FIX YOUR 'FIX-IT' MEETINGS

April 2025

TABLE OF CONTENTS

PREFACE

I've written this book for purely selfish reasons… Money?... No, probably won't break even…. Truth be known, I am trying to prevent having a stroke or even have my head actually explode when I attend one more 'tiger team', 'fix-it' sessions where the facilitator, who thinks they know how to run an effective meeting, misses just a few important elements that can make or break achieving goals.

My extensive background in Value Engineering includes facilitating a fixed job plan of team process steps that produce results. I have found that very few special topic team leaders include and/or properly apply several of these steps that are crucial to finding the best solutions to whatever problem or need is at hand.

The good news is that I've identified just ***three*** of these elements, that if addressed, will likely increase the effectiveness of your 'fix-it' teams. The book discusses how facilitators can greatly improve their team meetings and results just by including the addition or improvement of these few process steps.

Frank Vicidomina

ACKNOWLEDGEMENTS

First and foremost, I thank the Good Lord above for our lives and the ability to write this book. All things are possible through Him!

And to my lovely wife Lisa, who puts up with me, motivates me, keeps me in love!

I also greatly appreciate the numerous professional colleagues that I've worked with over the years that have shared their valuable knowledge and experience that I hope I've done justice in this book.

I specifically want to thank Jeff Rude, CVS for his support and contribution of some of the material in this book.

INTRODUCTION

So, you've tried to improve a project/product, process, or event (PPE) in your company by means of 'tiger team', 'fix-it' efforts. Results have been OK, but you feel they're not as effective as you'd like.

From my 25-years plus experience as a Value Engineering professional, that includes facilitating and participating in related 'tiger teams', I am fully confident that addressing just ***three*** features of a typical 'fix-it' meeting(s) will likely significantly improve team workshop outcomes.

First, a little about myself….. Stuff below won't make much sense without knowing where I'm coming from.

I am currently a semi-retired Civil Engineer, Value Engineering (VE) Specialist, and Educator. I worked for a large federal agency, U.S. Army Corps of Engineers, where I managed the VE program for one of the largest districts. This work included facilitating and participating in over 200 VE studies and smaller special 'tiger team' sessions.

So. what exactly is VE?

Value Engineering is a process, developed in America during WWII, that utilizes specialized techniques to improve either or both project or process performance and/or reduce time and costs. VE is currently used in many federal agencies, state and local governments and corporations. When applied properly, both as a program and individual studies, it works. As a matter of fact, IT WORKS VERY WELL.

To be more specific, VE consists of a fixed job plan, that includes the following ordered phases:

- Information
- Function Analysis
- Creativity
- Analysis
- Development
- Presentation

A VE study usually consists of a week-long continuous workshop that is facilitated by a certified VE professional with a 5 to 10-person team of senior subject matter specialists. Outside staff or consultants not directly associated with the PPE at hand in conjunction with project staff members usually comprise the team.

(See 'SAVE International' for further details of VE) **(1)**

As you may surmise, a VE study per above is a relatively expensive proposition. While a reduced scope and team composition VE study can be effective and used for any

PPE regardless of size, VE has been best applied to large projects where such investment in the study is easily justified. A full-fledged VE study is therefore likely ***not*** the answer for your specific fix-it meetings but there are aspects of the Job Plan that can be easily integrated into your efforts and are likely to significantly improve results.

Three things that I present in this book that I firmly believe will improve your 'fix-it' meetings are:

1) **Expanding the focus of the team**: Identification of your project, process, or event required or desired ***functions*** creates the opportunity for expanded solution alternatives.

2) **Conducting a proper brainstorming session:** I am simply amazed that few facilitators, even outside professionals, execute an effective creativity session. A few basic rules of the road here should be followed to help find 'out-of-the-box' solutions.

3) **Simplifying the evaluation and selection of recommended solution action(s):** When called upon to compare and select a specific way forward, conducting a 'legitimate' evaluation, ranking and selection process is almost all the time lacking. Such efforts can be quite time consuming and 'crowd out' meaningful open discussions that often identify, refine or identify new solution ideas.

In this book I present examples of how inclusion of the above select VE aspects resulted in the identification of a 'best solution' by a tiger or 'fix-it' team.

Again, my focus will be on the above three suggested improvements. However, I feel I do need to mention all the other important aspects of facilitating a successful tiger team effort. I find that most managers and facilitators do address the following factors, but I present such as a 'checklist' for your pleasure:

- Management Support: It must be clear to all that management is supporting the tiger team's effort and desires results.

- Attendees: Having the right people on the team and initial participation and contribution is of course critical to success.

- Facilitator: While it is not necessary to bring in a professional facilitator, the selected individual running the show should be capable and possess some training and skills.

- Meeting Agenda: It is always critical to have a set agenda for this meeting. The team needs to be aware of such and progress should be measured with respect to the agenda at appropriate points during the session(s).

- Information: It is imperative that the tiger team be presented and have access to all information pertinent to the PPE.

- Preparation: Also important that team members prepare for the actual meeting(s) as best possible.

- Venue: Your team should be comfortable, etc. It matters!

- I.T.: Proper working presentation and internet access, etc. should be taken care of. Often much time is wasted setting up I.T. and getting it to work right.

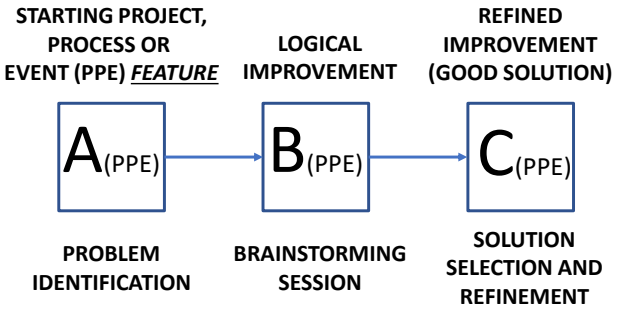
- Documentation: Very important that workshop results are documented in a professional and comprehensive manner. It is important that management can read such and understand it even after time has passed.

- Presentation: The results of the team should be presented to management and affected staff. Having actual tiger team members present at such presentation should be encouraged.

- Follow-Up: Often workshop recommendations require some form of initial actions to implement such. It is important to document and follow-up to ensure that these actions do happen.

So, let's go with the below graphic illustrating a typical fix-it team process. I will amend this as we apply the above three improvements.

Initial **Step A** the team is presented with problems and needs associated with a project/product, process or event feature. Logical potential improvements are identified in **Step B** brainstorming session that may be lacking. **Step C** produces a solution(s) that is refined and presented via an evaluation process that may be more complicated than needed.



NORMAL PROJECT/PRODUCT, PROCESS OR EVENT (PPE) FEATURE BASED IMPROVEMENT PROCESS

FIX-IT #1 – EXPAND FOCUS OF TEAM VIA IDENTIFICATION OF HIGHER ORDER FUNCTIONS

Management often sets the stage of focus by ***directing a very specific objective(s)*** like, 'fix this, lower the cost of that, solve this particular problem we've been having, etc.' While counterintuitive, ***broadening*** the perspective of the problem-solving team is actually quite beneficial in identifying the potential ***best*** solution(s).

The common practice of focusing just on the problem at hand is illustrated by our class example below that we will also reference in the following chapters, so please read 😊

The company picnic from hell……

Once upon a time a company of about 200 people had their company picnic. A summertime thing so children could attend. This year the company did well so management decided to sponsor the picnic via a Friday event, reserved several shelters at the public park and hired a BBQ caterer. The picnic time was from 11:00am to 4:00pm.

A good crowd showed up … most of the employees with their families. The caterer, however, was nowhere to be found. He did show up around 12:30, set up his cooking equipment and STARTS cooking the food. The first plate of food wasn't ready until after 2:30pm.

Needless to say, this was quite a disaster. People were quite frustrated; caravans went out to fast-food places while numerous others just left early. The picnic failure clearly achieved the level of the dreaded 'c' word…… That's right, I'll go ahead and say it…. 'CIRCUS'.

First thing Monday morning the company owner apologized to everyone and promised a proper event in the future. To that end, the owner directed management to form a 'Tiger Team' with specific direction to fix the catering problem for next year's picnic.

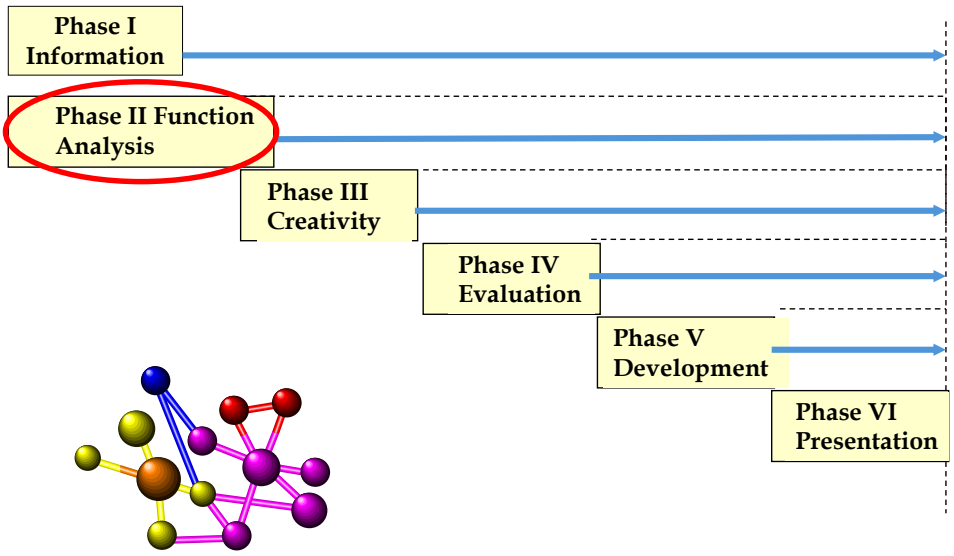
As discussed above and illustrated below VE is a structured 6-phase job-plan (see below graphic). It is usually applied to a large construction project or a complex process. Using this methodology for over 25-years now, I can say with high confidence that the VE process works. I'm not suggesting that your fix-it team perform a full VE

workshop. There are, however, some key features of the job-plan that can easily be integrated into a normal tiger-team effort.

So what makes VE special? The one phase of the process that is unique to VE is the 'Function Analysis' Phase. What we do here in VE is to identify and order project or process functions. The purpose of this is to further evaluate what it is the client ***wants to accomplish and WHY*** the activity being constructed or utilized. This expands the focus of the team from just the item in question to inclusion of the ***reasons*** for item.

The full Function Analysis Phase of a VE study includes identifying, classifying and ordering all project or process major features. The effort can take a couple of hours, or in the case of a complicated process, a couple of days. For your fix-it team, there is no need for this level of detail. ***I promise you that a simple 20-30 minute application of Function Analysis will significantly improve your workshop team results.***

The VE Job Plan



So let's talk about how your team would go about applying basic Function Analysis to your workshop……

Quite simple – the facilitator asks the team ***WHY*** we are building or performing the activity in question. Upon receiving an answer, the facilitator once again asks ***WHY*** do we want to do that? Another team answer, another ***WHY*** prompt from the facilitator until there is no longer a 'higher order' reason for the identified function. The team

should define functions in a simple ‘verb-noun’ format. This helps to distinctly define each function.

Let’s see how this would work with our picnic catering improvement team:

Issue – Directed Focus Item: Fix BBQ Catering for Next Year’s Picnic

Facilitator asks: ***Why*** do we need a BBQ caterer?

Team answer (of function): **Supply Food**

Facilitator asks: Why do we want to supply food?

Team answer: **Conduct Event (Picnic)**

Facilitator: Why conduct a picnic?

Team: (to show appreciation of employees) **Appreciate Employees**

Facilitator: Why appreciate employees?

Team: cause it’s a good thing……

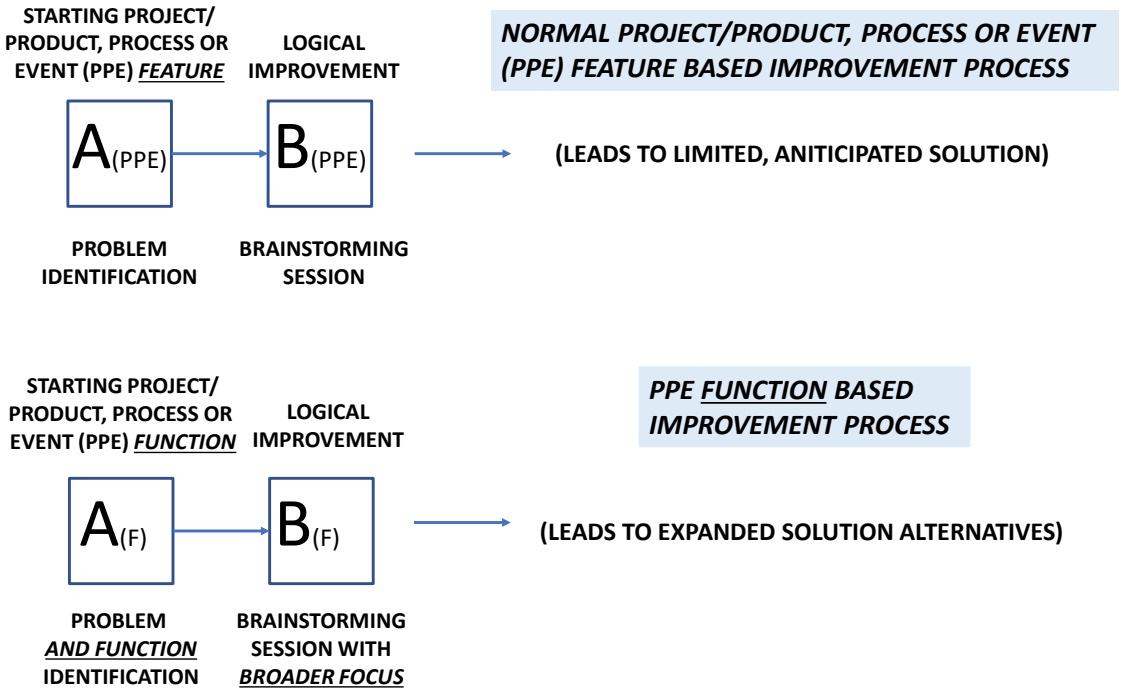
So what’s the point here? The team now can expand the set of possible solutions to not just the BBQ catering but may explore alternative means to accomplish the purpose of the catering and the picnic itself. May I emphasize here that this is **NOT** a re-direction of team focus, but an ***expansion*** of same. Not an OR process; it’s an AND one. Applying basic function analysis does not diminish selection of an anticipated solution. More choices are a good thing and also solidifies your selected fix decision.

(Side bar – many issues are wrongly framed as this OR that in lieu of this AND that…. Just my 2 cents…)

If your task involves more than a single item, then identify separate sets of functions for each. Sometimes redundant functions are identified (see last example below) or a function is identified that the item or activity does not adequately perform.

The diagram below illustrates the difference between a directly focused fix-it team and that where event/item/project or process functions are identified and also considered. Both workshops should commence with key staff in attendance (in person or virtual). Discussions of what the event/item/project or process is as well as issues affecting successful execution are also conducted. Additionally, both workshops should establish from key staff what performance improvements are desired (aka ‘Performance Attributes’). Examples include such factors as ‘Meet Schedule’, ‘Maintain Safety’, ‘Minimize O&M’, ‘Please Parents’, etc. The workshops now diverge with the latter

identifying the functions of the event/item/project or process. These functions are now included in further workshop evaluation (brainstorming and developing solutions).



More examples of successful application of basic function identification versus typical 'fix-it' team performance are shown below. Once again, the differences between the two processes are:

Issue:

Team Directed Mission => Anticipated Solution

Vs

Identification of Higher Order Functions => Expansion of Solution Alternatives

(EXAMPLE – *Our beloved picnic….)*

Issue: Catered BBQ at company picnic was a disaster; food prepared two hours late

Team Directed Mission: Fix BBQ catering.

Anticipated Solution: Improve catering contract, replace caterer.

Vs

Identification of Higher Order Functions: Appreciate Employees, Conduct Event, Supply Food

Expansion of Solution Alternatives: Improve catering contract, replace caterer; have employee cooking contest (chili cook-off, crawfish boil, baking, etc.), have company day at amusement park, ballpark, rodeo, rent out bowling alley, etc.

(EXAMPLE – Playground Design)

Issue: Parents want more interactive elements included in the new park playground design

Team Directed Mission: Work with playground equipment supplier to add more interactive elements to their 'jungle gym'.

Anticipated Solution: Modify proposed 'jungle gym'

Vs

Identification of Higher Order Functions: Entertain Children, Promote Interaction, Motivate Children

Expansion of Solution Alternatives: Modify proposed 'jungle gym'; add interactive features like large 'Lego' block station, add flowing water and sand flume, small house boxes, etc.

(EXAMPLE – Stream Enlargement Design)

Issue: Pharmaceutical plant owner would not sell right-of-way for stream enlargement to accommodate rainfall flood events; expensive concrete box culvert proposed for equivalent stream section.

Team Directed Mission: VE Team directed to develop 'hybrid' stream design.

Anticipated Solution: Stream section design consisting of one side concrete vertical wall with smaller footprint earthen section.

Vs

Identification of Higher Order Functions: Reduce Flood Stages, Increase Stream Capacity.

Expansion of Solution Alternatives: Hybrid stream design section per above; excavate additional by-pass channel around the plant.

(EXAMPLE – Proposed Parking Lot for New Barracks)

Issue: An additional parking lot is required for a new Army barracks. The existing adjacent lot was determined to be too small so the initial design was to locate the new lot several thousand feet down the road.

Team Directed Mission: VE Team directed to adhere to Army specifications for parking.

Anticipated Solution: New, remotely located parking lot with the Army spec required number and size of parking spaces.

Vs

Identification of Higher Order Functions: Enhance Living Experience, Accommodate Barracks Occupants Parking.

Expansion of Solution Alternatives: Remote parking lot per above; build parking space size and number matching ***actual*** anticipated barracks occupants' (E3s drive many small cars and motorcycles) vehicles (challenge the design regulation and increase number of compact spaces) and re-surface and stripe the *existing parking lot* next to the new barracks.

(EXAMPLE – Agency Hiring Process)

Issue: Agency top management wants hiring to be done much faster. They feel that there is too much time between receiving a job application to actual hiring. There are two HR sections that handle hiring (Initial Screening and Interview/Hiring).

Team Directed Mission: Reduce time to hire an applicant.

Anticipated Solution: Re-allocate and/or add staffing to process more applications in less time.

Vs

Identification of Higher Order Functions:

(Screening Section) – Assure Employee Quality, Screen Applicants, Validate Qualifications.

(Interview/Hiring Section) – Assure Employee Quality, Obtain Knowledge, Interview Applicants, Check References, Validate Qualifications.

Expansion of Solution Alternatives: Re-allocate and/or add staffing to process more applications in less time. *Eliminate redundant effort* of validating qualifications – only validate candidates after passing interview.

For this last example I'm presenting the unabridged version to adequately explain it.

(EXAMPLE – Business Growth Plan)

Issue:

The small business franchise faced a significant challenge in acquiring new clients due to adverse market and seasonal conditions. Traditionally, substantial client growth had been achievable, but this year was particularly difficult across the industry. Businesses experienced sharp declines in client acquisition as environmental and economic factors reduced the overall demand for the services provided. This broader industry downturn triggered an urgent need to reassess client acquisition strategies.

Team Directed Mission:

Management directed the team explicitly to pursue aggressive growth strategies. The team was mandated to utilize additional capital resources to achieve growth through client acquisition. The objective was unequivocal: invest heavily in expanding outreach efforts and entering untapped markets to counteract the negative market trends and achieve measurable growth in market share.

Anticipated Solutions:

Initially, the team planned to execute this growth strategy by significantly increasing expenditures on traditional marketing channels such as direct mailers, coupons, radio advertising, and television commercials. The anticipated solution involved doubling the marketing budget to aggressively boost service awareness among potential new clients. The intent was straightforward—substantially increase visibility in hopes of attracting more business despite the prevailing challenging conditions.

Identification of Higher Order Functions:

To effectively evaluate alternatives beyond merely increasing marketing spending, the team engaged in identifying the fundamental reasons behind their client acquisition efforts***.*** By systematically asking ***"Why?"*** the team uncovered these higher order functions, which expanded their strategic focus:

- Favor Existing Clients
- Amaze Existing Clients
- Inspire Referrals
- Incentivize Referrals
- Systemize Referrals
- Funnel Attention

This exercise revealed a broader understanding that sustainable growth might be better achieved by deepening existing client relationships rather than solely seeking new acquisitions through traditional advertising.

Expansion of Solution Alternatives:

Guided by these higher order functions, the team developed alternative solutions that significantly differed from the initial high-expenditure marketing approach. Rather than focusing externally, resources and efforts were redirected internally towards existing clientele. The team prioritized initiatives designed explicitly to amaze and delight existing customers, thereby organically inspiring and incentivizing client referrals.

By systemizing the referral process and leveraging the positive experiences of current customers, the business managed to achieve notable results. This inward-focused strategy resulted in a growth of 20%, an impressive feat considering many other franchises within the network either shrank or went out of business during the same period. Remarkably, this growth was achieved with a marketing spend significantly less than in previous years, demonstrating the effectiveness of strategic focus over sheer expenditure. Ultimately, this alternative solution provided consistent, sustainable growth despite the challenging market and environmental conditions.

FIX-IT #2 – CONDUCT A PROPER BRAINSTORMING SESSION

I really can't believe that I'm compelled to address brainstorming, but I'd say more than half of the facilitators I've worked with just flat out do it wrong! The ***purpose*** of a creativity session is to produce a maximum number of ideas regardless of their usefulness. The ***ultimate goal*** is to identify one or more solution alternatives **NOT** previously thought of going into your workshop. Here are my observations and opinions on fixes:

(Allow limitless thought)

More than a few facilitators screen ideas as they are stated. Not good. Let everything get posted on the board, flipchart, spreadsheet, whiteboard, whatever. We want **BOTH GOOD AND BAD** ideas at this point. Purpose here is to get as many ideas out there as possible. No interruptions – only allow brief clarifications, etc. Consider all ideas, as good ideas. Criticizing folk as they produce ideas is a real buzzkill. It turns people off and they stop participating. Ok to giggle and laugh a bit….the team is allowed (encouraged) to have some fun here. What you want is a rapid-fire free flow of ideas – like making popcorn. Shoot for 100 ideas! Really, I set that as a goal and try to brainstorm right before lunch. I hold the team hostage until they meet or get close to that goal. 😊

So why entertain and waste time on bad, even obviously stupid ideas? Well, a bad idea may stimulate a ***new,*** good idea. A good concept part of a ridiculous comprehensive idea can also find its way into potentially good idea and complete it. Example:

Allow me to ~~steal~~ use an item from, *"Lateral thinking – Creativity Step by Step, by Edward de Bono, 1970"* **(2).** The author writes (para-phrased):

'A fourth-grade teacher asks his class to come up with a better way to pick walnuts. He tells them that the current practice is for people to climb trees with a burlap sack draped over one shoulder. They pick the walnuts, fill their bags, climb down and empty them into the back of an open truck. Rinse and repeat, right?

So, a boy in his class draws a picture of his proposed improved method. The sketch shows a truck with a very large lobster type claw on its front. The claw then grabs a tree trunk, yanks the tree out of the ground, shakes the tree over the open back of the truck filling it with walnuts. The claw then slams the tree back in its original hole….. move to the next tree.

So, we have an obvious impractical idea here. But wait a minute, you California folks already know that the way walnuts, and many other fruits and nuts are harvested, is by a truck with a front-end tree shaker device that sends nuts to the ground. The truck also has something on the order of a driving range golf ball picker-upper that conveys the nuts to the back of the truck. **Think again about this kid's 'dumb' idea….. It identifies the critical, unique action of *SHAKING THE TREE!*** He also shows that the truck accomplishes all the necessary actions by itself.

To be honest, a dumb idea transforming into, or as part of a great idea, doesn't happen all the time. However, when it does happen, it is a very, very, very cool thing!..... How this may work for our 'Fix the Picnic Catering' and another real-life project, are shown later in this section.

(Assure total team participation)

Comprehensive brainstorming should have total team participation. The facilitator must make sure no one is intimidated or hindered in any way. Encouraging some 'fun' with this can work well. Like, don't allow serious idea criticism but laugh and joke instead. Also, if someone is dead quiet, diplomatically call them out. A technique I frequently use is something like, "John, I heard you mention 'xyz' before … can you expand on that ? Maybe add an idea or two to our list".

(Stay 'out-of-the boxes')

Something that truly may make my head actually explode in a workshop is containing brainstorming efforts to one subject item at a time. So here we go…. A facilitator will give an intro speech on brainstorming with the likes of 'Let's try for some out-of-the-box ideas here…. Now, the first (issue or item) we're going to brainstorm on is this box only, item/issue xyz….' Are you kidding me !!!!!!!!!.....

Ok, I get the perceived need to focus on things, but there's a better way to do this (see below). What really happens when one brainstorms one box at a time is that it hampers team members ability to free-lance ideas and get those 'trigger' items discussed above. Let me explain, if a team member(s) has an idea they're dying to put on the board and they have to wait because the facilitator is limiting ideas to a different item, that team member's brain is all but completely 'stuck'. I've been here a bunch of times…. Don't know exactly what 'brain thing' is happening here, but until that pent-up idea is released, it is very, very difficult to open one's mind to focus on other items. Again, there's a better way to do this – see two paragraphs down.

(Keep session alive; organize data later)

As stated above, creativity works best when ideas are free-flowing without interruption. I've seen many facilitators do some 'housekeeping' during brainstorming by organizing idea categories while they are being produced. Please don't do or allow this….. It isn't hard at all to do any organizing you feel necessary ***after*** the brainstorming session.

(Use previously compiled information and analysis)

Last but certainly not least, is making sure the items, issues and especially **FUNCTIONS** are addressed in brainstorming. Well, didn't I just say 'Don't brainstorm in a particular box?' Yup, but when the 'popcorn popping' of ideas slows down, ***THEN*** it's time to go back and re-present each item, issue, function to the team and ask, "Do we have any, or enough ideas on this?"…… This deferral of specific focus allows the exhaustion of the free-flowing of ideas before 'in-the-box' brainstorming.

In consideration of the above, what might our brainstorming list for our picnic fix look like? Consider that we've expanded our focus by identifying additional event ***functions*** other than having a catered BBQ picnic. A portion of our expected idea list:

Idea No.	**Idea**
1.	Establish picnic committee
2.	Have committee thoroughly check prospective caterer's references
3.	Include a performance bond in the caterer's contract
4.	Have a picnic every month
5.	Consider alternates to BBQ
6.	Consider alternate events in lieu of a picnic such as day at the ball game, bowling night, amusement park, rodeo, etc.
7.	Have an additional event(s) in between picnic dates
8.	……
9.	……
100.	……...

Look at Ideas 4, 6 and 7. Idea 4 not a good idea, right? Idea 6 a definite maybe. Idea 7 is ***stimulated*** from Idea 4 (Why not have ***additional*** events). It then picks up Idea 6 as to what such events might be instead of a picnic. Point here is that one, or multiple brainstorming ideas ***(good and/or bad)*** can stimulate another idea – perhaps a winner!

That's want you want to get out of a brainstorming session.

Let's look at a big project example of a 'dumb' idea homerun:

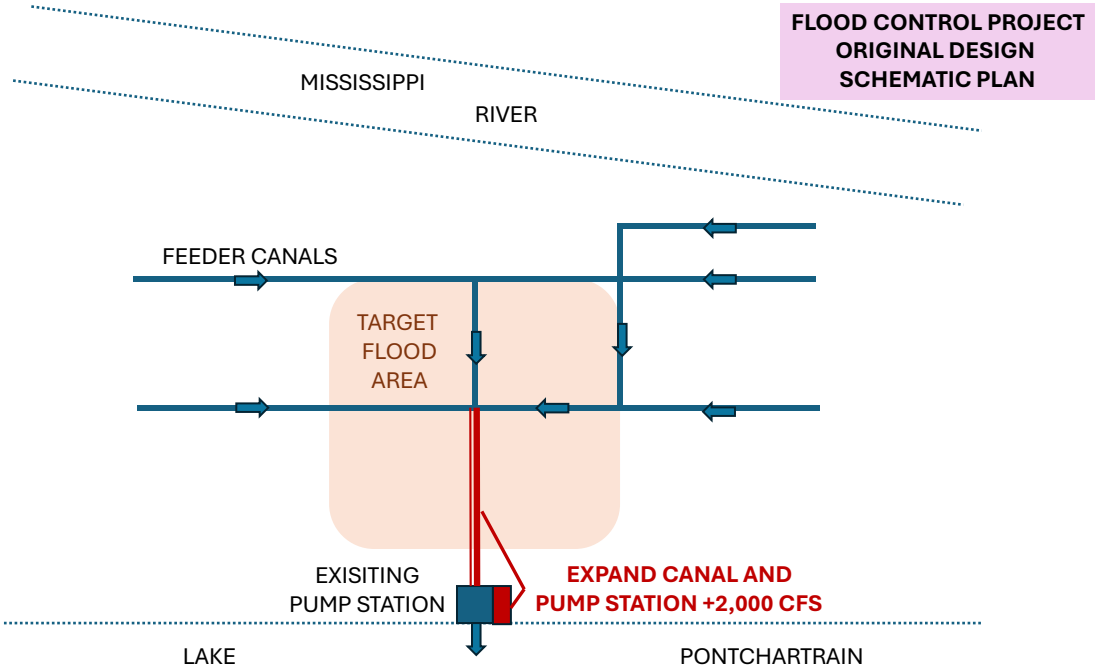
The project plan given to my VE Team consisted of improving drainage in a densely populated section of the metro area. The goal was to reduce rainfall flood stage height and frequency by means of enlarging an existing pump station and feeder canal conveyance capacity by 25% - about 2,000 cubic feet per second (CFS). Major construction/cost issues were at hand, including but not limited to, limited and/or no available right-of-way to expand the pump station and especially the canal (see photos below). My VE Team was directed to find a cost-effective way of accomplishing the proposed expansion within existing (or minimal additional) public right-of-way.

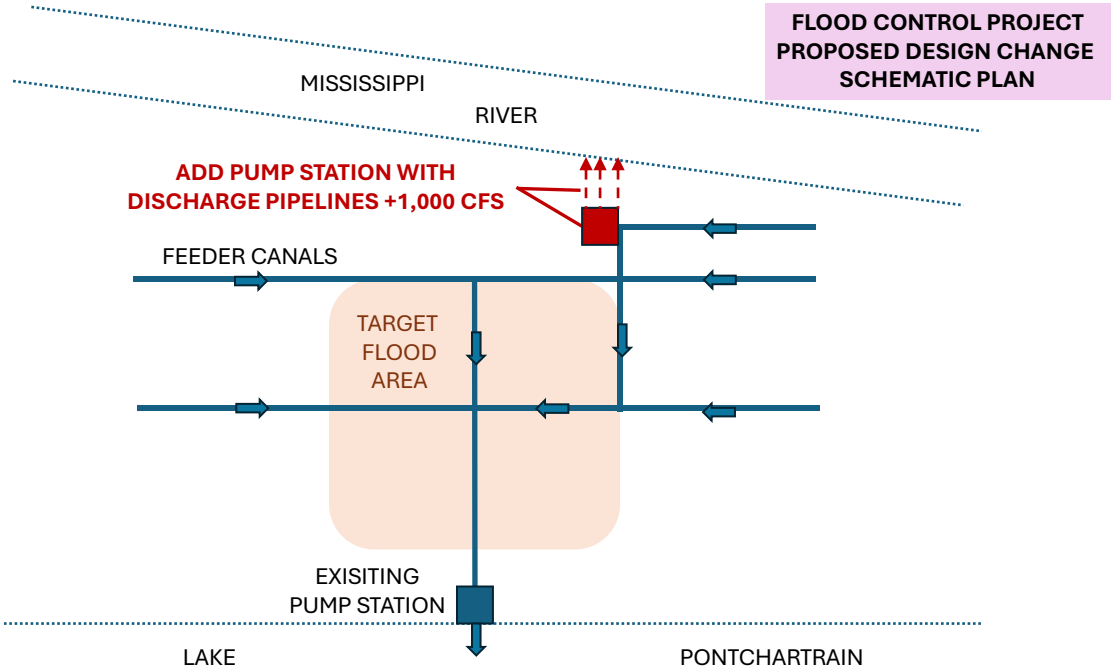
We performed our initial Function Analysis and identified higher order functions of 'Reduce Flood Damages' and 'Lower Flood Stage/Frequency'. This was a critical step and set the stage for success. Our brainstorming session included expected alternative solutions addressing efficient (smaller footprint) canal and pump station designs. An idea was put on the board to build an auxiliary pump station in the middle of the area, close to where most flooding occurred, and pipe the discharge all the way to Lake Pontchartrain (see below schematic graphics). The idea was inherently thought of as impractical given that pipes would have to be enormous and the physical placement of this pump station would require significant new right-of-way. However, our hydrology team member recognized the potential efficiency of building such an auxiliary pump station further upstream in the system with uphill discharge to the Mississippi River (see schematic). He offered the 'adjusted' idea to our list.

So the initial idea of a separate new pump station located mid-basin was obviously not feasible, the NEW CONCEPT of both a supplemental pump station and especially conveying discharge flow in pipes was utilized in a second, perhaps doable alternative. These new design concepts WERE NEVER, EVER, considered by the city over more than 100-years history of rainfall pumping.

The alternative was developed by the VE Team and appeared to have promise. The project design team later refined the design and found out that such an upstream diversion was far more efficient in lowering flood stages versus the original plan of increasing downstream flow capacity. This efficiency was quite significant as it was determined that the VE plan pump station conveyance only needed to be about half the size of the original plan (1,000 vs 2,000 CFS). This flowrate reduction required smaller

pipe discharge size such that the alternative became feasible and was ultimately constructed at a much-reduced cost (see photos of new station). 😊





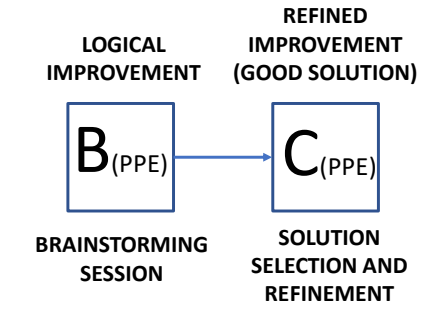
PROJECT PUMP STATION – LIMITED ROOM TO EXPAND

PROJECT CANAL – LIMITED ROOM TO EXPAND

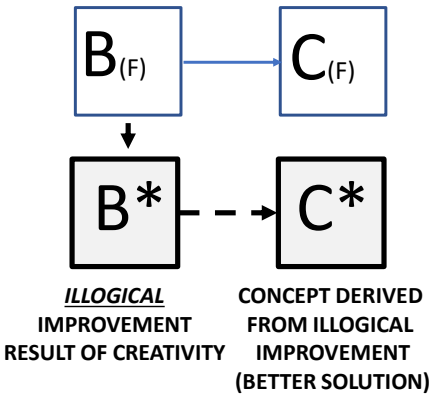
NEW SUPPLEMENTAL (SMALLER) PUMP STATION

NEW SUPPLEMENTAL PUMP STATION DISCHARGE PIPES

In summary, and in case you're not reading what we've written and just looking at the pictures, let's illustrate proper Brainstorming in the diagram below:



NORMAL PROJECT/PRODUCT, PROCESS OR EVENT (PPE) FEATURE BASED IMPROVEMENT PROCESS



PPE FUNCTION BASED IMPROVEMENT PROCESS WITH IMPROVED BRAINSTORMING

FIX-IT #3 – SIMPLIFY THE EVALUATION AND SELECTION OF RECOMMENDED SOLUTION ALTERNATIVE(S)

So now you have a list of ideas. How do you get from here to a recommended solution(s) to your directive?

It depends.

Did your team identify the obvious best alternative(s)? or, Is the situation such that you must recommend a single plan to move forward? or Can (should) you offer several different options?

When it's apparent that the best alternative(s) has been identified, a simple short paragraph reiterating why it's the way to go is all you need to move on. The latter situations, where screening and recommendation/selection are necessary do require some type of evaluation process.

Almost all agencies and/or professional facilitators have a systematic evaluation methodology. Such usually employs some form of 'weighted' numeric rating system which follows some established process. There are more than a few commercial packages out there to apply. Most processes are 'tried and true' so what's Frankie's problem here?..... I'm generally ok with what these structured evaluations ***do***; I will talk about one major element that most ***don't do*** and how to fix that. I will, however, offer the following critique/improvement comments to these established rating processes:

(Every process is the ***best…***… AND the ***worst***)

In my early years as a Value Engineering practitioner, I made it a point to get trained in all the various methods of performing alternative evaluation. Every representative for each method went to great lengths to show how their process was far better than the others and the only legitimate one out there. In short time I developed my own not so humble opinion on each method and that is, 'each one is the best…. each one is the worst'…. I've concluded that any method that relies on a weighted numeric analysis can easily be 'adjusted' (or manipulated) to produce whatever answer the workshop team believes is correct. While this stuff is fun and gives the ***appearance*** of completely objective decision making, I firmly believe that the time spent performing such evaluations can and should be better spent.

(Unless you have data that can objectively measure non-quantitative factors, applying numerical ratings to such is almost completely arbitrary.)

Keep in mind that most of the time your tiger/fix-it team does not fully represent the people who will be affected by the workshop recommendations. As such, the exercise of applying weighted numeric factors to non-quantitative rating factors may not accurately reflect client or end-user opinions. Even minor changes in factor rating can often change results so why use numbers that are almost completely arbitrary?

Almost every tiger/fix-it team workshop that I've participated in applied several iteration adjustments to their weighting numbers because the initial results did not reflect the opinion/expectation of the team. Discussion would occur describing *WHY* the numbers didn't pan out as expected and changes were made accordingly. SO WHY NOT JUST DOCUMENT THE DISCUSSION AND NOT APPLY NUMBERS????? !!!!!!!!

There are, however, times where numeric data can effectively be quantified for qualitative factors. For example, this can be the case where opinions are surveyed and statistically quantified. Such data must be obtained directly from the end-users and be mathematically sound. *(I took in a conference presentation by a Japanese company that built total kitchens. They surveyed prospective customers on their relative preference of appliance size, cabinet space and counter space. They then used the results of this survey to apply statistically sound weighting to factors used to evaluate new ideas produced in their product improvement workshop).*

(Make sure your process is legitimate and can be checked against itself.)

If you do insist (or are required) to use some form of structured evaluation process, make sure that what you do can be pass logic tests. So you weigh Factor 'A' as twice as important as Factor 'B'. You weigh Factor 'B' as twice as important as Factor 'C'. Therefore, Factor 'A' better be applied as FOUR TIMES as important as Factor 'C'. I've seen many workshop evaluation results that do not maintain consistent logic.

Another thing I see almost all the time that raises my stroke risk is the weighting of already qualified factors – ESPECIALLY COST! Cost is usually considered one of the most, if not the most important rating factors. A maximum relative weighting factor is often applied to cost. An example might be that Alternative 1 is 10% cheaper than Alternative 2. This relative advantage is greatly amplified by weight such that Alternative 1 gets a numerical rating of let's say 150 while Alternative 2 gets a 100. Wtf???? Alternative 2 is ONLY 10% MORE EXPENSIVE……

(A suggested better way - **'Fix-It #3'**….)

Consider ***not*** using a formal rating system to evaluate workshop ideas. The time saved can be better utilized per below. If you must use a formal process, you can still get there by performing the evaluation in the following effective way.

Keep it simple.

From vast experience of participating in evaluation sessions I strongly believe that the best use of time is to ***not*** apply ***any*** structured process. Best method is to just have the team talk about ***every*** idea on the board. Doesn't this take a lot of time? No it doesn't - even with 100 or so ideas, you can get through them in less than 90 minutes if things are kept under control. If you do have numerous ideas, it can be helpful to put them into some category groups as that will provide some subject focus and avoid duplicate discussions later.

Use 'performance attributes' (rating factors) that the team has established, as guidance when needed, most ideas get a simple 'yes, good idea because xyz', or 'no, bad idea – with a chuckle and/or an xyz explanation'. There will be items where the disposition is not so definite; these should be discussed with reference to your rating factors.

Even if you are required to use a formal evaluation process, with numeric ratings, etc. you should still perform your initial screening via group discussion and not be simply yes/no elimination of any other non-interactive means like individual team member voting. Again, the time to briefly address every idea will not burn excessive time and may have the HUGE benefit below.

Here's the punchline to this chapter and one of the main points of this book !! ….:

CONTINUE BRAINSTORMING DURING YOUR EVALUATION PROCESS!!!

TRY IMPROVE IDEAS AND/OR COME UP WITH ADDITIONAL IDEAS VIA DISCUSSION OF EVERYTHING ON YOUR BRAINSTORMING LIST…..

OFTEN THE BEST IDEAS ARE IDENTIFIED AND/OR DEVELOPED HERE !!!!! (This rarely happens when the above mentioned structured methods are used !!)

New and/or improved ideas can be identified by mixing, combining and salvaging good parts of bad ideas as well as further out-of-the-box presented above. Also, some mis-conception of idea features can be changed via even just short team discussions.

Your recommendations for selected alternative(s) implementation are also fair game for continued brainstorming as you develop it.

What could happen with our beloved picnic…….

So we are evaluating ideas about how to fix our company picnic. Per above, we've opened the scope to include other meal options and even different activities other than, or in addition to the picnic. Discussion of the latter ideas might lead to the question, "Well, which one of these alternate activities should we recommend? What is the best one(s) from this group?" This could very well lead to the additional idea of, "Why don't we survey employees to see what their reference is for the picnic and other potential events?" So here is ***an additional idea*** produced via idea discussion during the evaluation process. Good stuff!

Let me digress a bit and go back to discussing how one might perform a structured evaluation of alternatives and not use numeric quantification of qualitative factors. Below is a rating matrix for a very large flood control project – *'Empire Flood Gate'*. The matrix shows cost and five rating factors which were rated from Excellent to Poor. While the performance attributes are listed left to right in order of relative importance, no weighted numerical factors were applied.

The associated write-up for this matrix discusses the basis for the rating of each alternative per factor. For example, for Alternative 3 – 'Utilizing the existing floodgate and constructing a new pump station would meet schedule deadline but its long-term reliability, construction impact and maintainability relative to a new structure and no pump station is far inferior to these other plans. Isn't this better than saying this option only gets 100 points versus 400 for the best alternative?

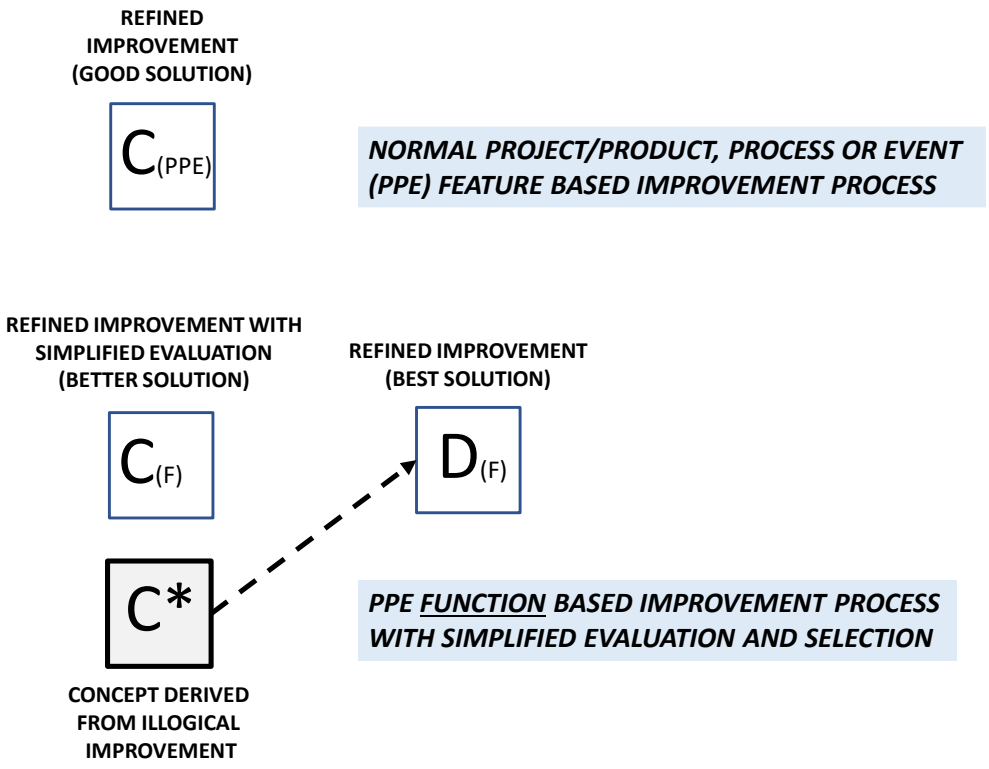
The matrix indicates that Alternative 2 appears to be the best plan as it has the lowest cost and excellent ratings on key performance factors. Just for kicks, what if Alternative 5 had a lower cost – say $87 million or so? What would be the best option then? Hard to make that call. Probably beyond the capability of the tiger-team to refine further. A recommendation of both alternatives for further consideration would probably be the way to go. But what if a point system was utilized? Then, Alternative 5 may get a 410 versus the 400 of Alternative 2. And, if cost was weighted heavily this point difference may be even larger, falsely indicating that Alternative 5 is the clear choice.

Let's once again use our magic boxes to graphically illustrate what we've presented for **'Fix-It #3'** (reference below graphic):

ALT#	DESCRIPTION	COST $ MILLION	RATING FACTORS				
			Flood Control Reliability	Meet Finish Deadline	Construction Impacts	Maintenance	Navigation Operations
1	Build new floodgate in line with the existing lock	$ 100	Excellent	Fair	Good	Excellent	Excellent
2	Build new floodgate just north of existing floodgate	$ 90	Excellent	Excellent	Good	Excellent	Excellent
3	Leave existing gate as is and installl new pump station to convey overtopping	$ 96	Fair	Excellent	Fair	Poor	Excellent
4	(Eliminated from consideration)	N/A	N/A	N/A	N/A	N/A	N/A
5	Build new floodgate at the southwest corner of the hurricane protection levee just west of the existing floodgate	$ 94	Excellent	Good	Excellent	Excellent	Excellent

ALTERNATIVE RATING MATRIX

FOR EMPIRE FLOODGATE


REFINED
IMPROVEMENT
(GOOD SOLUTION)
C(PPE)
NORMAL PROJECT/PRODUCT, PROCESS OR EVENT
(PPE) FEATURE BASED IMPROVEMENT PROCESS
REFINED IMPROVEMENT WITH
SIMPLIFIED EVALUATION
(BETTER SOLUTION)
C(F)
REFINED IMPROVEMENT
(BEST SOLUTION)
D(F)
C*
PPE FUNCTION BASED IMPROVEMENT PROCESS
WITH SIMPLIFIED EVALUATION AND SELECTION
CONCEPT DERIVED
FROM ILLOGICAL
IMPROVEMENT

INTEGRATION OF ALL 3 FIXES

Let's put it all together….

(Fix-It #1)

Expand team focus beyond the one-dimensional problem at hand. We can do this by identifying our project, process or event (PPE) ***higher order functions***. Facilitator asks Why?..... Then Why?, again and again until the team runs out of answers. Expanding focus to include functions broadens the scope of the workshop and can often set the stage for out-of-the-box solutions. For our picnic:

Directive to fix BBQ catering for next year.

Higher order functions identified were Supply Food, Conduct Event and Appreciate Employees.

(Fix-It #2)

Conduct a proper brainstorming session. This is accomplished by **Allowing Free Thinking** via wide open 'popcorn' posting of ideas with no criticism. Encourage as many ideas as possible including bad ideas that may stimulate good ones.

Assuring Total Team Participation by making everyone feel comfortable and diplomatically calling out silent individuals if need be.

Keep the Session Alive by initially **Staying Out of Specific Item Boxes –** let the team rip. Address specific items, ***functions*** and performance attributes when the 'popcorn popping' slows down. Also, postpone any data organizing until after the session. Brainstorming results for our picnic included:

Do a better job of checking caterer references. Consider a performance bond.

(And broader scope related ideas….) Consider alternatives to a BBQ or even a picnic. Consider different types of events (day at the ball game, bowling night, amusement park, etc. Have intermediate events in addition to an annual picnic.

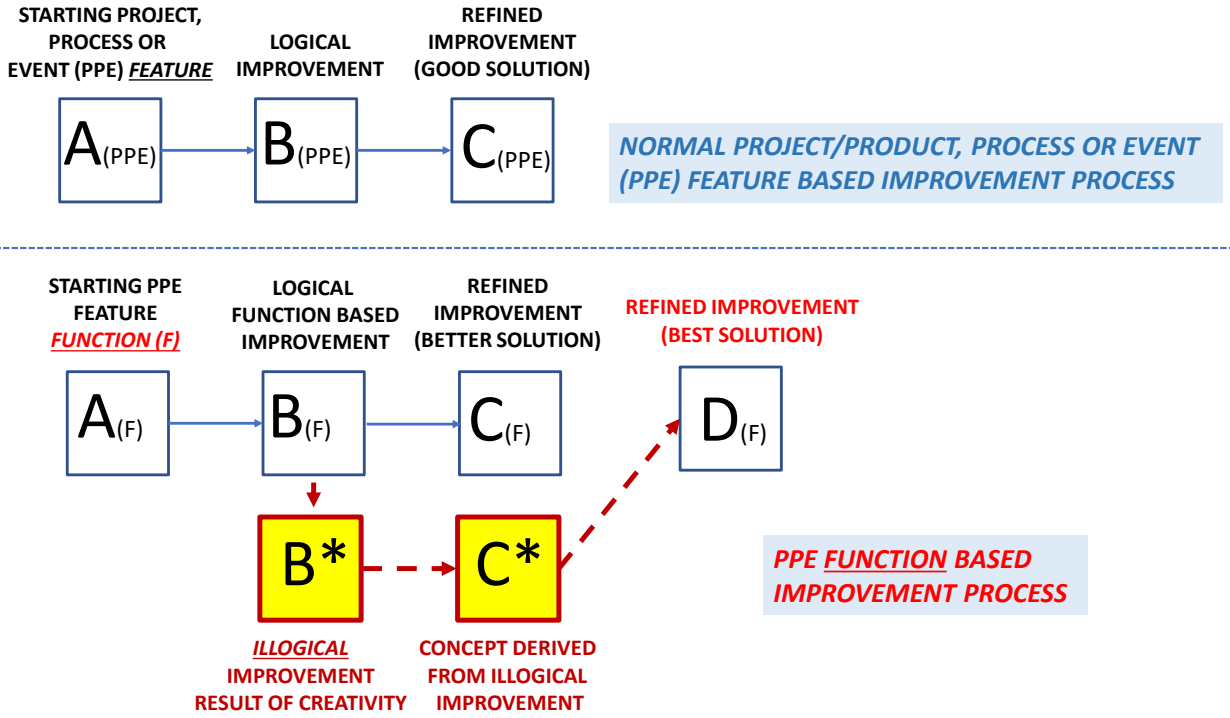
(Fix-It #3)

Simplify the evaluation and selection of recommended solution alternative(s). **Keep the evaluation process simple;** avoid using a 'points' system if possible. Time is better spent talking through every idea with reference to performance attributes (rating factors) identified by the team. **Continue brainstorming during the evaluation process!** Discussing ideas (good and bad) may still stimulate even more alternatives. These new

ideas are often the best of the workshop! Try to 'salvage' good parts of bad ideas and perhaps apply such to improve others. For our beloved picnic, evaluation discussions could have generated the additional idea of surveying employees for their preferences for both the picnic and perhaps additional events.

So let's envision how management and the company owner may receive our workshop results after giving us the specific directive to fix the BBQ catering. First, we do have ideas specific to the problem but have expanded the scope of our workshop to include different activities. The owner may be really pleased with the thought of an additional (smaller) event that can be executed as soon as possible to make amends for the picnic C-word. 😊

And of course, for those of you just looking at the pictures, I have completed our normal process versus applying the 3-fixes for your workshop (see below). Also see another project example that utilized all 3-fixes following this diagram.



(Post Hurricane Katrina Area Radio System Problem)

During my time working for the U.S. Army Corps of Engineers, New Orleans District, I was tasked to facilitate a tiger team to figure out a way to re-establish area-wide radio communications taken out by Hurricane Katrina. We utilized the 3-fixes above and all three contributed to the workshop's success. The situation was as follows (note that my recollection after 20-years is a bit sketchy on the exact details, but things pretty much went like this):

The New Orleans Area is served by several agencies responsible for the construction, operation and maintenance of the flood control system. There was an inter-agency radio system used by all for quite a few years. It worked well but was becoming obsolete. Replacement options were being considered. Communication is critical during disaster events to monitor conditions and respond to emergency needs as they happen.

The system was damaged and failed during Hurricane Katrina. Minimal operation was restored but not to the reliable level needed for the next storm event. More robust repairs were not implemented because a new radio system contract was desired. As time grew closer to the next hurricane season, agencies realized that the system needed to be usable in just a few months. To that end, the Corps of Engineers coordinated an inter-agency tiger team to figure out how to get at least a temporary suitable radio system online in short order.

I was 'blessed' with the responsibility of facilitating this workshop. Representatives from every agency attended and were eager to solve the problem. **My directive was VERY SPECIFIC and had two requirements:**

1) Get a radio system online by June 1st (I believe we were in February or March), and
2) Assure that whatever we do can be utilized as part of a new system such that we didn't put good money to waste.

I certainly picked a bad time to stop drinking….. 😊

So **anticipated solutions** were on the order of 'How can we get the likely contractor for our desired new system to immediately install some level of radio communications in a short time…. And, be able to use what they build as part of the permanent system…. And, (punchline) how can this be done within government procurement laws and regulations?"

To that end we had about (50) team members that included radio geeks, general operations staff and contract procurement specialists as well as various levels of management. It was quite the C-word indeed…. 😊

Despite the enormity and management directive, I went about conducting the workshop using Value Engineering techniques (3-fixes) as I always do. Many thought I was wasting time deviating from our orders but that was really the only way I knew how to do things.

Moving forward after we discussed what happened and the current situation, I proceeded to ask the team , "***Why*** do we need a radio system?" Team consensus was to **"Communicate with agencies and field staff**". Asked Why again; response was to **"Coordinate activities"**….. Why?..., **"Respond to emergency events'**. For better or worse, I had our **Higher Order Functions**. **Fix-It #1** accomplished.

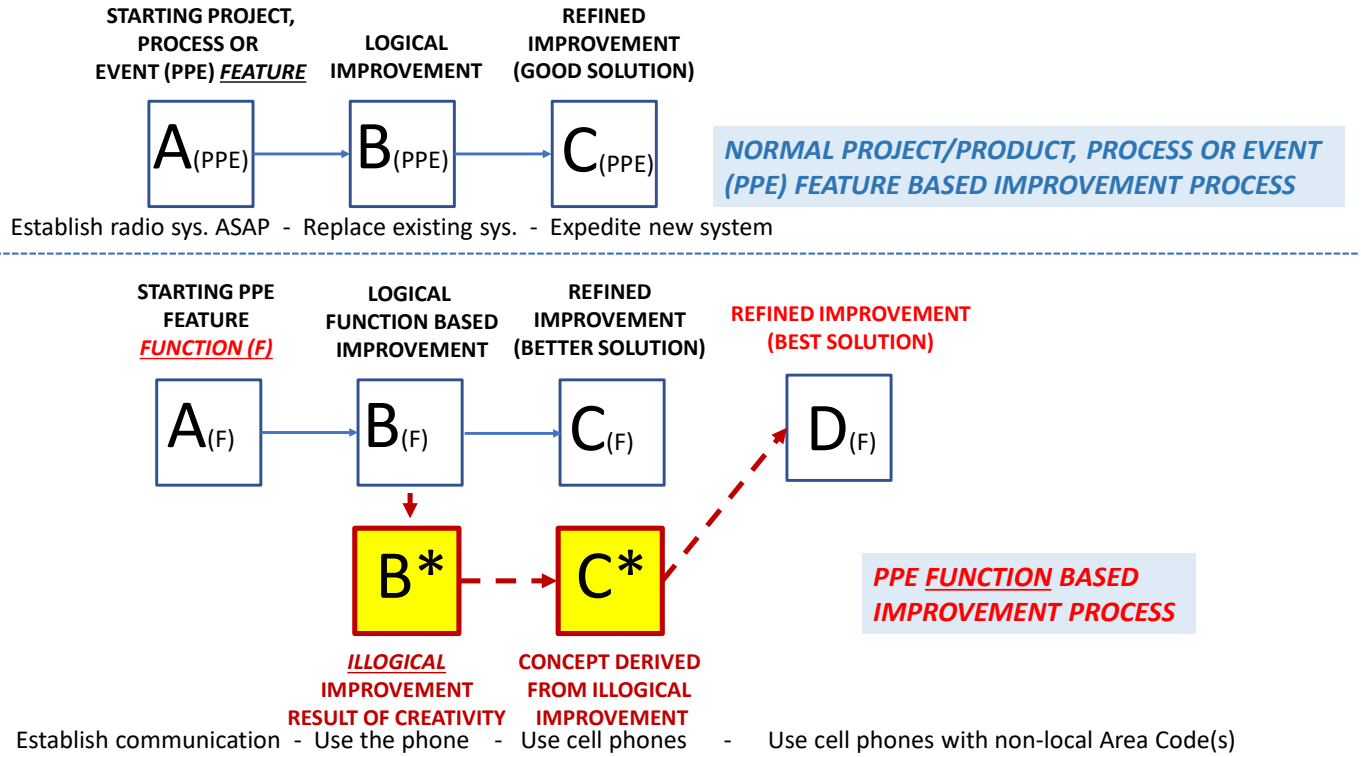
After establishing our 'Performance Attributes (idea rating factors) we proceeded to Brainstorming. Once again, I did what I do…. expanded the scope of the brainstorming to include addressing the Higher Order Functions. I allowed any and all ideas, explaining to the team that bad ideas can be a good thing – stimulate good ideas. Many ideas were put on the board addressing altering the new radio system, how to set up a working system in short order, and a whole slew of how we can do this within the law. We also had some bad ideas; one in particular that related to a Higher Order Function was something on the order of, "Just give everybody a cell phone". This got a good chuckle from the team when it was posted since all phone communication in the New Orleans Area went out both during and for days after the storm. Obviously one of those 'stimulator ideas' at best. **Fix-It 2** done.

Moving on to Evaluation….. We had quite a few ideas posted – at least 100 or so. In between sessions I grouped ideas in about 8 or 9 categories to help focus on deciding good, bad or maybe. I did not do any type of pre-screening and insisted on talking through every idea even if obviously a no-go. I also avoided conducting a numeric rating system of ideas (many attendees were expecting this, but I got my way). I again encouraged the team to come up with additional ideas or improvements to others as we discussed each item. I was impressed with the team – we had several very promising ideas directly on-point to our directive. All was well. I read the idea of giving everybody cell phones. It got the expected re-chuckle. There was a passing comment from the back of the room as I recall….. Went something like, "Yeah, nobody had cell phone service except for my wife…. She had her company phone with a Texas area code.' The chuckles stopped and I paused to let someone else ask the obvious. I got it as someone offered, "Well, can we do that?"…. A following comment, "Are cell phone towers reliable/resilient enough to withstand a major hurricane?" Other similar concerns were raised but discussions revealed that the existing radio system did not fail because the towers were blown down. System failure occurred because critical equipment located at the bottom of the two towers, even though they were 5-6 feet above ground, were flooded by flood levels that exceeded 10-feet. Also noted was the fact that phones

stopped working not due to storm damage but because there was an overload of calls on the 504-area code. While it seemed that this idea was off-point, it appeared to satisfy both functions and performance factors. We included it (bottom of the list) in our set of possible solutions. Checkmark for **Fix-It #3.**

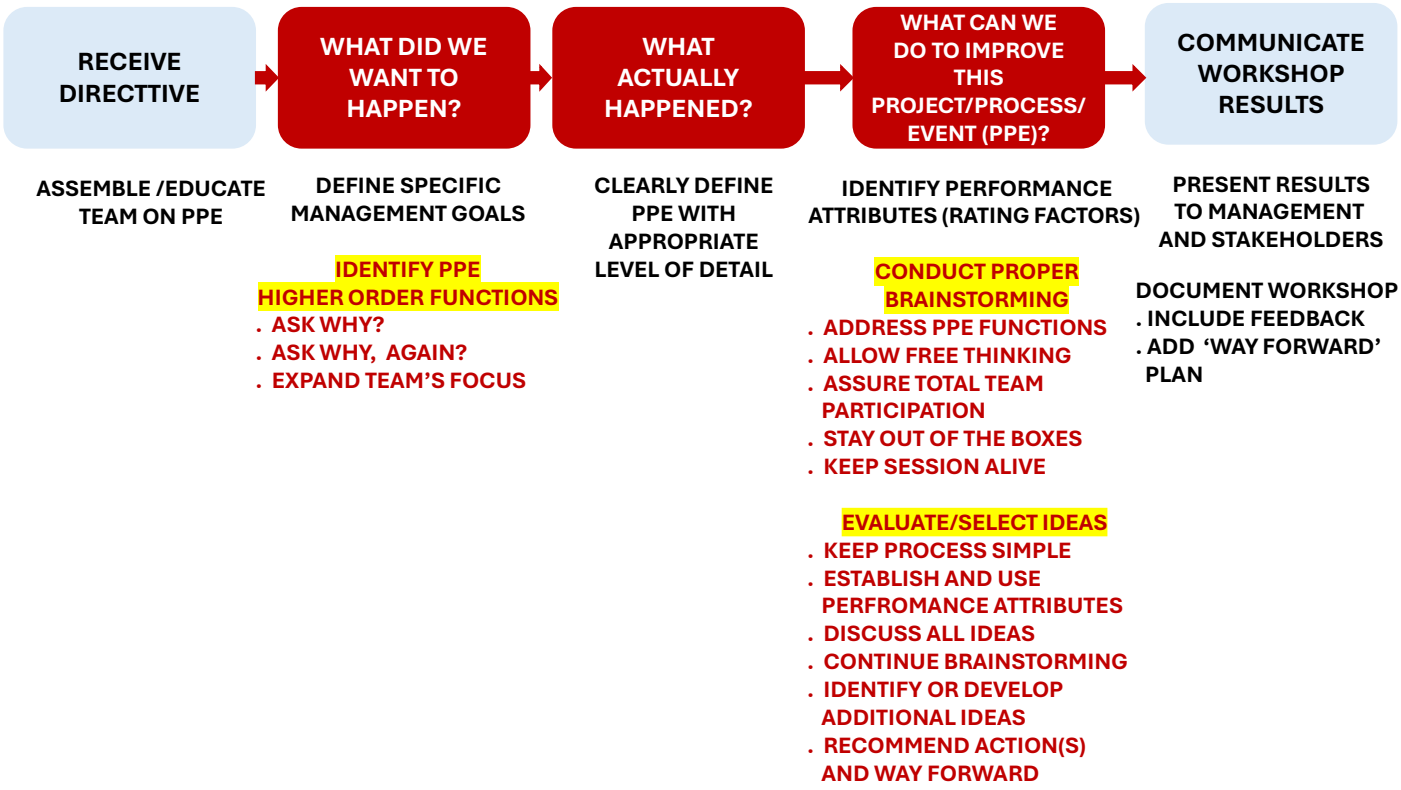
So how did things go after the workshop? You guessed it! About a thousand or so cell phones with a St. Louis area code were distributed to agencies in time for the upcoming hurricane season……. Badda Bing!!!!!

Gotta do this diagram to finish things off:



PERFORMING AN AFTER-ACTION REPORT USING THE 3-FIXES

Now for extra credit ….. Many companies/agencies perform After-Action Reports (AARs) or something similar. AARs may be part of the company/agency's standard operating procedure after and/or at project milestones. These fix-it workshops are also performed as needed to fix specific problems encountered in a project, process or event (PPE). The diagram below illustrates where our above presented '3-Fixes' should be integrated in an AAR workshop. Fix-it items are highlighted/red printed.



AFTER ACTION REPORT PROCESS WITH '3-FIXES' APPLIED

THANK YOU!

So, that's my story and I'm sticking to it……. I hope you enjoyed the above and you can make some positive improvements to your future 'fix-it' meetings.

Let me know what you think, and I'll be more than happy to nswer questions and/or further discuss meeting facilitation. I am also available to teach this a short 2-hour course, and/or assist in facilitating a tiger team or AAR.

My email: *FrankVicidominaLLC@yahoo.com*

Best of Luck!

Frank Vicidomina

REFERENCES

(1) SAVE International (see website: (www.value-engineering.org)

(2) Lateral Thinking – Creativity Step by Step, by Edward de Bono, 1970

AND ABOUT THE AUTHOR ……

I hope you enjoyed this book and found your time investment worthwhile. Putting this together was indeed a joy for me. So, a little about myself – graduated Tulane University (Civil / Environmental Engineering) a hundred years or so ago and currently hold professional licenses as a Civil Engineer and Certified Value Specialist; worked as a design engineer in private industry for a bit then for a regional flood control agency.

Last destination was with the U.S. Army Corps of Engineers, New Orleans where I started as a facility relocations specialist, then planner and a 21-year stint as Value Engineering Officer. In that capacity I managed a substantial VE program, facilitated studies, managed VE consultants and served on study teams for various other Corps VE workshops. I believe my situation allowed me to gain a unique and broad perspective on how VE studies are performed. I hope I was able to share this knowledge with you and that you may benefit from it.

As for the present, I am enjoying semi-retirement, spending time with my wonderful wife, daughter and especially getting a big kick out of the paw-paw thing……..

Frank Vicidomina