

Ongoing Discussion “Thought Piece”

***Thinking In Community While Framing Your Project -
Beyond Playing Nice***

Prepared and Presented by

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InThinking Network

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ABSTRACT

The purpose of this thought-piece is two fold – to bring light to two highly interdependent bottlenecks commonly found in organizations. The first bottleneck could be described as the human condition. Given how each of us interprets our own reality, it is surprising we can work together at all, let alone *Think In Community*. The second bottleneck is how a company invests capital and human resources to satisfy the needs of the customer. Can a candidate project be framed to simultaneously bring higher customer value while reducing the conditions driving the first bottleneck—ultimately setting up for *Thinking In Community*?

Local Optima

It is quite common for people, groups, or business units to optimize their work activities towards the local recognition and financial rewards. This focus drives individual areas to work towards their respective ‘goals’ and ‘objects’ without regard to how their activities affect other areas. Each believing and espousing their action are for the benefit of the company as a whole. And why not? The business measurement system demands this localized focus and punishes those who do not conform. What is missing is the focus on the intended performance, value, or worth of what the whole project must do, as opposed to how the project is accomplished. No wonder most business players feel this conflict driven anxiety frustration in their gut, with little hope of resolution.

“Being Nice” Training May Help, Conflicts Remain

We may say we need to get along with each other better. “We need better listening skills,” “We need better team skills,” so we spend time and resources in Team Member, Team Leader, and the likes of “Ropes” training. Hopefully some of tensions will subside for a time, but they really won’t go away. The core conflicts remain. The underlying issues remain. What if there was a way to address core conflicts while naturally re-skilling leaders and team members to the practice of playing nice with one another and multiplying their creative and problems solving abilities for the company—all at the same time. What if? What if?

Is There Any Hope?

As it turns out, there is! But there is so much “good” stuff out there, how does one select a path. Most any popular path can lead to improvements for a while, but substantial improvement rates will stall. And when one becomes stalled one becomes driven to try harder, constrained to use the same thinking as in the past. But trying harder without new understanding and the supporting process for change, can only lead to compounded frustration.

Trying to solve business issues without also supporting the issues in a context of what it means to be human, may work for a time; however, focusing solely on business issues makes achieving the higher potential of the entire effort more unlikely. Hence a serious conflict is ignored. Business issues and human abilities/limitations/motivations etc. are **both** critical to the success of any project.

Tackling the Human and Work Issues Concurrently

In Value Methodology, the suite of tools sequenced in a skillfully moderated process reliably leads to empathy, insight, truly creative potential, critical thinking, insightful solution sets, buy-in by the stake holders and a sense of productivity unlike none ever experienced before.

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The only real way to come to agreement with this claim is to experience it for one's self, while focused on a real issue or product. Using the 'job plan' with a multidisciplinary group utilizes a set of tools sequenced so the desired behaviors occur naturally and great creative problem solving on real work happen at the same time. The job-plan-workshop structure throws some twists such that participants are less likely sway the teamwork to their own vested interests.

Improvements for a Season

After World War II, key people from the US were offered opportunity to participate with the Japanese people in the restoration of their economic capacity. W. Edwards Deming, Professor Peter Drucker, Joseph M. Juran, Lawrence D. Miles, to name a few. As Japan made rapid advances in changing their reputation from producing junky stuff to quality products, some in the US began to investigate why it was that Japan could build higher quality products than the US could—leading to the birth of the Quality Movement in the US.¹ Recognition for one author there was a quality movement afoot came in 1989. At that time, the Quality Circle was becoming popular in US industry. Put some people in a room and tell them to make some improvement in something. There was lots of training on how to participate on teams, on team leadership and the like. Additional approaches sprang forth, with focus on removing waste, removing variation, standardizing process and so forth. All of these improvement attempts seemed to work for a season, but then their effectiveness would flatten out. One author began to recognize the core philosophy of any of the popular improvement approaches needed insight from the others. What else was missing? It was Deming who summarized this issue with the *System of Profound Knowledge in The New Economics, For Industry, Government, Education*. He identified Appreciation for a System, Knowledge about Variation, Theory of Knowledge, and Psychology—as it applies to individuals, society and processes of change. All four of these identifications are both unique and highly interdependent on the other three.²

Evidence for Hope

In 1991 one author had the opportunity to deploy in a large engineering organization a team based process of inspecting documents for errors, so that the error-producing process elements could be improved. . The process worked so well, that document authors would authentically express their appreciation to their team members. The question then arose, What was it about this “inspection” process that enabled it to become so highly successful? The answer was buried in the behaviors allowed and not allowed among the team members, along with the process established for communications among members. And this insight gave rise to this author's ongoing inquiry; What would it take for people to truly be able to think in community in other applications? Thinking in Community requires a much deeper level than team members and leaders just playing nice with each other.

Thinking Together is *NOT* Just Working Together

Working together is different than thinking together. We learn to play and work together though our life's socialization experiences, culture, rules and norms of our society, with the feedback of enforcement to those rules. Seldom do we actually have the opportunity to think together let alone participation in formal experiential practice. Thinking in community may in fact be much more difficult then we perceive. Let's take a quick review of a few of many difficulties that discourage thinking in community.

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The Makings for Insight into the Human Condition.

It was Alfred Korzybski in 1933, *Science and Sanity, An Introduction to Non-Aristotelian Systems and General Semantics* that laid out important insights as to the practical implications of our brain's operations, which in turn manifest as our human behaviors.

Three Examples from Korzybski

Every possibility for data entry into a human enters through at least one of the five sensory systems, the Visual, Auditory, Kinesthetic, Olfactory or Gustatory. This massive data stream will be heavily influenced and altered by our own personally unique set of filters while on the way to form our perceptions. Some of these filters take the form of Beliefs, Values, Attitudes, Memories, Decisions, Meta-programs, each with a probability of Deleting, Distorting and Generalizing the internal-brain representation building process. These internal representations form as Pictures, Sounds, Feelings, Smells Tastes, Self-talk. Then we give meaning to these representations with language, using “*about*” words. With these internal representations and language one might say we are mapmaking, building a representation internally of the external, albeit distorted, generalized, and without full detail. This map can never represent the external event as it exactly exists in reality. Two people witnessing together the same sunset, or car crash, will not have the same map. And the words each uses to describe the event will further exaggerate and distort the reported differences.

It was Korzybski that gave us this well known phrase: ***The “map” is not the “territory”***. Why is this important? Because people respond according to their “*maps*” and not the reality their map represents. Keep in mind internal mapping includes both the logical and emotional domains.

So as our biologics take in and continue to process newly deleted, distorted, and generalized data then merge it with our existing map already comprised of deleted, distorted and generalized data we can become highly skilled at keeping these invisible internal processes outside of our conscious awareness. Let's also not forget “We have to operate linguistically-mentally with “*undefined terms*”. If we enquire about the 'meaning' of a word, we find that it depends on the 'meaning' of other words used in defining it.”³ In other words, additional distortions occur because thinking processors are language-symbol dependent on circular validations.

Adaptations of Korzybski's explorations of inference show up in the works of Edgar Schein, Chris Argyris, and Peter Senge. L. Michael Hall.

Again, we process the external sensory inputs, selecting data, mixing it with our existing map to create meanings and make further map-informed assumptions, reaching conclusions to reinforce beliefs, motivating new action. (Appendix “A”) Said another way, because of expectations and pre-judgments our reactions, judgments, impulsive intervening actions leading to new external events have lots of opportunity to go sideways. (Appendix “B”) And the opportunity for distorting doesn't stop there. We also use our power of mental reflexivity (feedback) to modulate our continual data stream and the inferences we make—Without bothering to notice “that an inference *is not* a description.”^{4 5}

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So if we have all this opportunity for individualistic erroneous mental processing, What chance do we have for constructive thinking in community, especially when we are certain what we have in our head *is* reality? Now that depends on... It would seem that if one was able to improve their emotional-logical map representational accuracy one would improve their capacity for useful thinking. In systems, in general, feedback can be used as a means to improve a *systems'* operation. ⁶ The same approach "can" be used within a system-community. Instead of a collection of people defending their point-of-view and promoting their personal optimization, it may be possible to organize the system at play so that useful feedback occurs. And as feedback occurs, personal map resolution improves. And as personal map resolution improves, new possibilities for belief and action emerge. It will take a carefully designed participation structure, but never the less possible. Let's look at one such structure that has a long and demonstrated highly successful track record for business and industry. Now, as we transition in this thought-piece to a focus of *getting real work done* we have an opportunity to maintain our awareness of the preceding concepts and explore how these concepts may facilitate getting real work done while promoting *Thinking in Community*.

In order to act as a Thinking Community we need to communicate on the primary levels of; Physical, Logical, and Emotional.

- The Physical folks want to see what it is that they should do to reach the Vision
- The Emotional folks wish to feel congruent with the Vision
- The Logical folks inquire about the thinking behind the Vision

Thinking without action is the slowest route to victory.

Action without Thinking is the noise before defeat.

Adapted from Sun Tzu, 400-430 BC (Zhou Dynasty), Chinese Military Strategist, Author of "Art of War"

As a 'community' of people committed to thinking together, the course of action is two fold. First is defining the elements of the project. What we call 'Framing' the project. Second is identifying solutions that will accomplish the goals. Using a series of divergent/convergent or inductive/deductive activities (Appendix D).

Committed - Involved

When making breakfast, the chicken is involved, the pig is committed!

The approach used is called Value Methodology. It is a suite of tools sequenced in a skillfully moderated process that reliably leads to empathy, insight, truly creative potential, critical thinking, insightful solution sets, by-in by the stake holders and a sense of productivity unlike none ever experienced before.

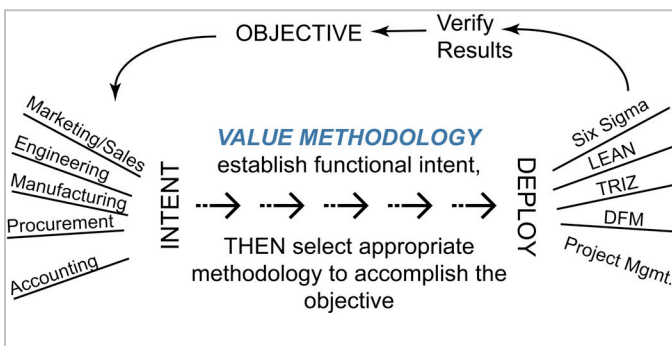
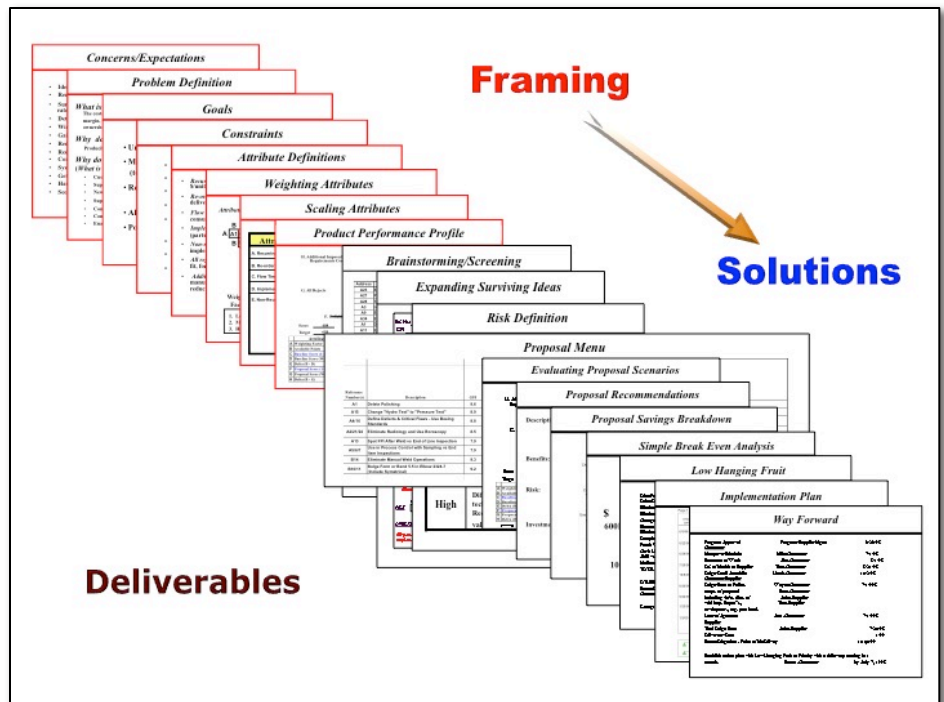
The only real way to come to agreement is to experience it for one's self, focused on a real issue or product. Using the 'job plan' with a multidisciplinary group utilizes a set of tools sequenced so the desired behaviors happen naturally and great creative problem solving on real work happen at the same time. The workshop structure throws some twists such that participants are less likely sway the teamwork to their own vested interests.

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The underlying foundation of Value Methodology is to challenge the assumptions about how the product or service satisfies the needs of the customer. Customers need something **done**, they want an **outcome**. Customers don't want a **feature**, they want a **function**. After all, it is the function that creates a benefit for the customer.

Value Methodology has been evolving for the last 60 years as a way to remove 'unnecessary cost' from the product design before, during, and after the fact. This approach is slightly different than Lean. Many times Lean's 'eliminating waste' is subject to local definition, frequently carries emotional baggage or uses a limited perspective. The Value Methodology approach is emotionally neutral and is a result of a study from a cross-section of business functions.



Value Methodology takes multi-disciplined representatives (aka Thinking In Community) through a structured investigation (Appendix C). Value Methodology transcends corporate cultures and uses language that goes past symptoms, to the heart of the business issue. This approach essentially separates INTENT from METHOD, creating **clarity of thought**, then builds a METHOD based on INTENT.

SOME HISTORY

Modern day Value Methodology originated at the General Electric Company during World War II as Value Analysis. Lawrence Miles, a GE engineer, was tasked to determine how to produce hardware for the war effort, despite shortages of key materials. He approached the problem by identifying what intent the hardware had to perform, and then exploring alternative ways of providing those functions.

Lawrence Miles outlines a structured process that consists of defined steps called a 'job plan.' This 'job plan' builds on the foundation of identifying what the customer needs, as opposed to the producer's perception of what the customer wants. From the foundation of customer needs, a

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series of requirements are created and prioritized. His approach is based on a few deceptively simple questions:

- 1) What is it?
- 2) What does it do?
- 3) How much does that cost?
- 4) What is it worth?
- 5) What else will do that?
- 6) What does that cost?

Very easy questions to ask, and many people are quick to answer. However, bring a group of people together from inside and outside the organization to answer these questions, you quickly find a vast array of answers. Almost as many answers as people, each from a different perspective, each with different viewpoints and preconceived ideas.

To Lawrence Miles' surprise, his alternative solutions often achieved the required functions with lower cost and/or higher performance. His approach was so successful that the US Navy adopted his methodology and changed the name to Value Engineering. Since then, Value Engineering has spread to industries and governments throughout the world.

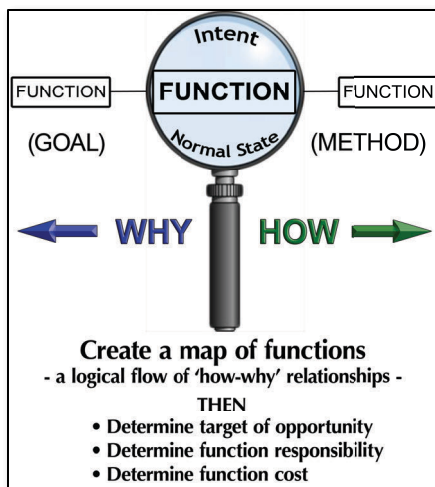
True Story

A sheet metal part is attached to the exterior of a missile. This part had the longest lead-time, and the highest scrape rate of all other parts.

The LEAN group worked on the processes for six months, reducing lead time and rejects by 50%.

Value Methodology worked on it for one and a half days, then eliminated the part.

The VM team found that the part was a shield, protecting sensors from the airstream during development testing. Once the tests were complete, the missile went into production and the sensors were removed. However the shield was retained!



In the 1960s, Charles Bytheway developed a graphical method of analyzing the dependencies between sequential functions. A structured modeling approach that separates 'what' must be done (intent) from 'how' we choose to do it (activity). With this method, he was able to identify a complete, non-redundant set of functions. Creating a diagram to quickly recognize missing functions, redundant functions, and areas of low value; and for mapping functions to organization's processes, products, events, and other systems. His Function Analysis System Technique (FAST) has become a mainstay of Value Engineering.

In the early 1980s, J. J. Kaufman expanded the basic concepts of both these men's work, broadening the application of Value Engineering beyond the application of physical sciences into the area of resolving business problems and capturing business opportunities. He created Value Management - an organized effort directed at analyzing goods and services to achieve necessary functions and essential characteristics in the most profitable manner. Value Management determines cost generation and evaluates a range of alternatives including new concepts, reconfiguration, eliminating or combining items, and process or procedure changes. These elements bring marketing, engineering and manufacturing together to "take deliberate action to improve cost effectiveness."

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Let's discuss 'Value' in more depth. We are talking about Economic Value, not political value, not social value, not judicial values, etc. Lean defines value as satisfying the customer's current need at the right time. Value Management defines value in three elements:

- 1) Utility or performance value – how well does it work
- 2) Exchange/Worth value – what is the purchaser willing to pay for the product's function
- 3) Esteem Value – desire to own, e.g. a brand name

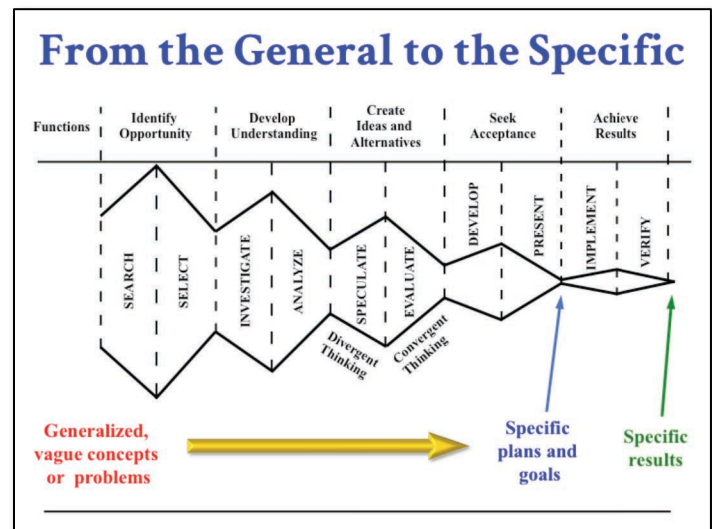
The ultimate value can be calculated as Use, Worth, and Esteem; divided by the price paid. This definition is more difficult to define, however, it provides a robust description of value for the purpose of product design. Lean's definition, while also challenging to define, is activity based and in a language more suited for the local production environment.

$$\text{Value} = \frac{\text{Esteem (Want)} + \text{Exchange (Worth)} + \text{Utility (Need)}}{\text{Cost}}$$

THE TOOL

The foundation of the investigation focuses on the FUNCTION of the item under study. Mapping the relationship of a single base function to multiple secondary functions, using How/Why relationships in verb/noun statements. In addition to understanding how functions relate to each other, functions can be assigned items like costs, responsibility, departments, and other business information.

The basic application is a series of divergent and convergent activities. As each step refines the thinking, reduces the volume of ideas, and focus understanding, allowing for an objective and integrated solution. Here are the main areas of emphasis with a few examples of tools:



1. Identify Opportunity

- a. Search (divergent) – Questionnaires, Brainstorming, Issues & Concerns, Nominal Group Techniques
- b. Select (convergent) – Hi-Cost Drivers, Management Focus, Impact, Pareto & Histogram Charts, Decision Analysis

2. Develop Understanding

- a. Investigate (divergent) – Cause & Effect Diagram, Target Costing, Flow Charts, Quality Function Deployment
- b. Analyze (convergent) – Function Analysis Systems Technique, Cost Analysis, Life-Cycle Cost, Impact Changeability

3. Create Alternatives

- a. Speculate (divergent) – Imagineering, TRIZ, Brainstorming, Experts

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- b. Evaluate (convergent) – Gut Feel Index (GFI) - Delphi, Paired Comparison, Design Of Experiment, Multi-voting

4. Seek Acceptance

- a. Develop (divergent) – Cost Analysis, Affinity Diagram, ROI/ROA/IRR, Break Even Analysis, Regression Analysis
- b. Present (convergent) – Strategy, Proposal Development, PowerPoint, Flip Charts, Milestones

5. Achieve Results

- a. Implement (divergent) – Project Management, Leadership, Requirement Definition, Responsibility Assignment Matrix
- b. Verify (convergent) – Check Lists, Control Charts, Audits

Summary

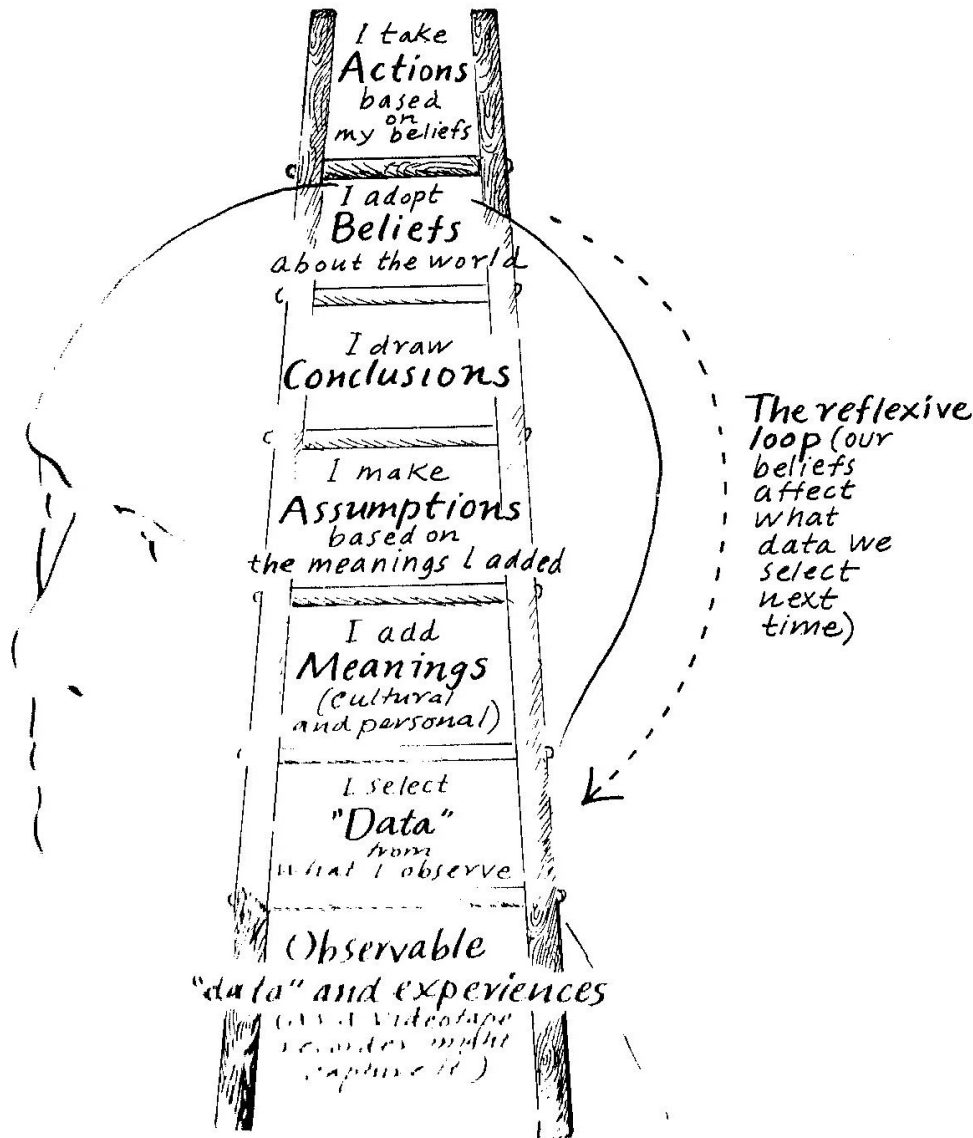
Bringing multidisciplinary groups together to work on a business issue is fraught with potential problems. Long standing conflicts may exist between departments, the team has no experience about how to think together, each person brings a piece of the business issue but the ‘big picture’ is obscured by local perspectives. The list of potential conflicts is long.

However, the skillfully moderated process and tools of Value Methodology does two things at once: First, it guides people to new information and feedback into their mental ‘maps’, and improving the ‘resolution’ of their mental map. As the personal map resolution improves, new possibilities for belief and action emerge. Second, VM separates symptoms from causes, then creates actionable proposals and plans supported by facts and data that can be implemented and validated. Ultimately it produces an empathetic, critically thinking, and truly creative team producing insightful solutions, with a buy-in of the team and sense of productivity unlike none ever experienced before.

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APPENDIX A



Source:

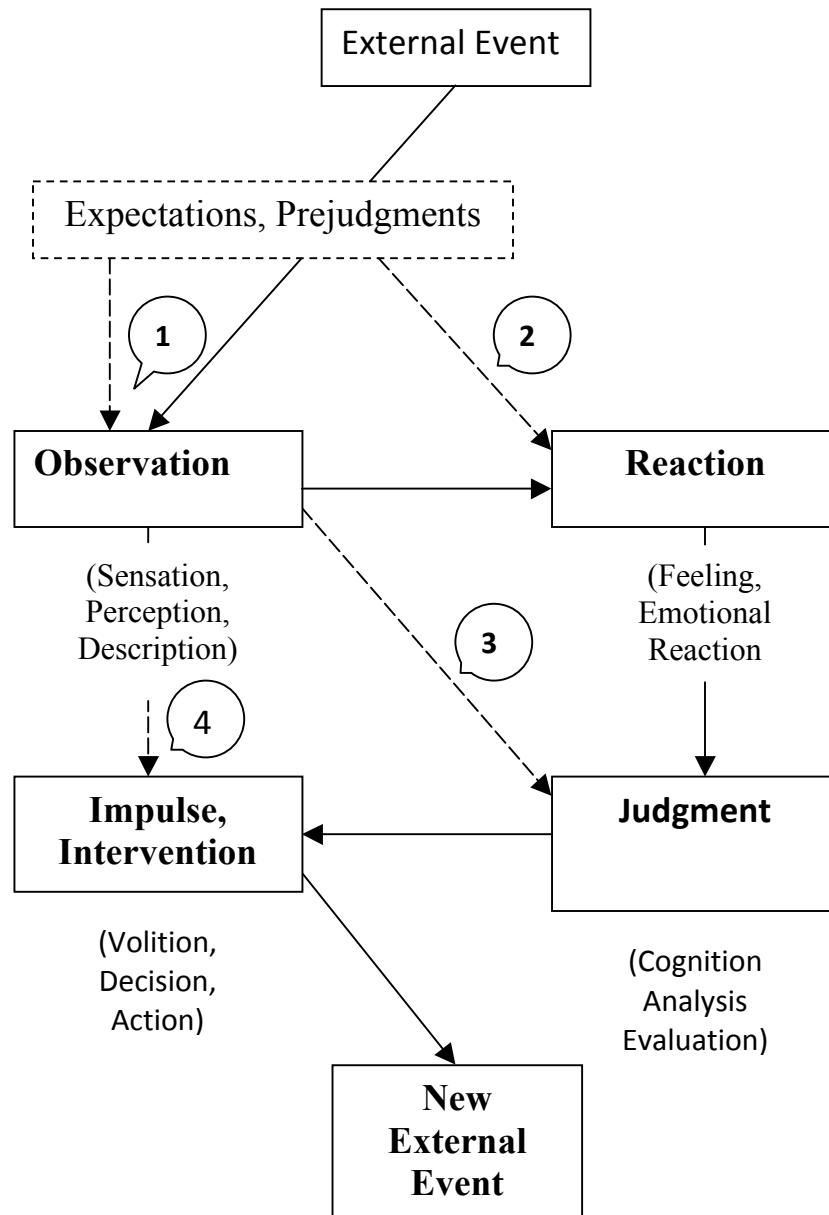
- Chris Argyris, *Knowledge for Action*, p50-57
- *The Fifth Discipline Fieldbook*, Peter Senge, Charlotte Roberts, Richard Ross, Bryan Smith, Art Kleiner, p243,
- The Ladder of Inference Creates Bad Judgment by Ed Muzio
<https://www.youtube.com/watch?v=K9nFhs5W8o8>

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APPENDIX “B”

The ORJI Cycle



Traps:

1. Misperceptions
2. Inappropriate emotional response
3. Rational analysis based on incorrect data
4. Intervention based on incorrect data

Source: Process Consultation Volume II by Edgar H. Schein

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APPENDIX “C”

THE WORKSHOP PLAN

PRE-WORKSHOP

- **Brief Management:** Identify charter parameters
- **Structure Team:** Cross-functionality, Inside/outside views
- **Plan Workshop:** Logistics
- **Confirm Commitment**

FRAMING

A. Concerns/Expectations

B. Problem Definition: Separating Cause from Effect

1. What is the Problem?
2. Why is it a Problem?
3. Why Solve the Problem? (what happens if not solved?)

C. Project Goals: If accomplished will resolve the Problem

D. Attributes (Project Matrix): Identify Market Driven Value Added Characteristics

E. Performance Profile: Baseline Current Performance and Set Stretch Targets

F. Constraints: Identify Perception of Road Blocks

SOLUTION

G. Collect Knowledge: Project review, Review Technology/Benchmarking

H. Develop Understanding: Function Analysis Systems Technique - Dimension

I. Creative Phase: Brainstorm Functions, Generate Ideas (not solutions), Suspend Judgment

J. Evaluation: Clarify, Merge and Purge Ideas

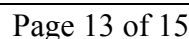
K. Develop and Sell Innovations: Write Up Surviving Ideas & Develop Proposals

L. Presentation: To Sponsors

IMPLEMENT

M. Track Progress

N. Celebrate Success



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Endnotes

1

Clare Crawford-Mason and Bob Mason speak to the beginnings of the quality movement in the U.S. during the first portion of this podcast.

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<http://podcast.deming.org/introducing-dr-deming-to-the-western-world>

(Sidenote: Clare Crawford-Mason presented the “Though Piece” June 2006; *The Nun and the Bureaucrat*.)

2 Viswanathan, Al; A personal inquiry into the interrelationship, dependence and supporting attributes, among the 4 elements of the System of Profound Knowledge using a “pyramid 3-D” model.

3 Korzybski, Alfred *Science and Sanity An Introduction to Non-Aristotelian Systems and General Semantics*, Fifth Edition, p21 (First edition published in 1933)

4 Ibid. P403, P788

5 For a look into the dynamic implications from these two relatively static pictures (Appendix A&B): *The Matrix Model, The 7 Matrices of Neuro-Semantics*, L. Michael Hall Ph. D. For an overview of Neuro-Semantics; <https://www.youtube.com/watch?v=7OYQRdei6Xo>

6 It is worthwhile to review the contributions of Ludwig von Bertalanffy (1901-1972) to the field of General System Theory, (AKA Systems Thinking), see; <http://panarchy.org/vonbertalanffy/systems.1968.html>

BIOGRAPHY

Steve Dightman is a principle at RegularGuys Consulting which provides multi-faceted consulting and coaching aimed at improving business performance. Steve has a diverse background which includes many years with The Boeing Co. where he supported manufacturing operations, engineering, facilities, and business process improvement. He managed the Commercial Airplane Co., Education and Training group, supporting real time embedded computer avionics and simulation, engineering applications, operating systems, software engineering development, supply chain software applications and manufacturing equipment maintenance.

While at Boeing, Steve co-led a weekly study group for 13 years in the investigating and implementation of business improvement theories, methods and tools including Continuous Quality Improvement (CQI), W. Edward Deming-Philosophy of Management, Theory of Constraints, Systems Thinking, LEAN, Six Sigma, Value Engineering, TRIZ, NLP-Neural Semantics, Human Performance Technology (HPT) and others.

Steve is Chapter President of APICS-The Association for Operations Management-Puget Sound Chapter and holds certifications as a Certified Professional Coach (CPC), Certified Performance Technologist (CPT), NLP-Neural Semantics Master Practitioner, and received a 'Jonah' certificate from the AGI-Goldratt Institute.

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BIOGRAPHY

Dave Nave is a Management Engineer with a focus on processes and systems in the context of the surrounding organization. With experiences in coaching and mentoring for a variety of improvement efforts, he is known for moving projects forward by investigating complex ideas in terms of business-engineering-operations, build rapport, use critical thinking, and providing new insights in plain, easily understood language.

Dave's experiences include the automotive, defense, and aerospace, microelectronics, and vacuum technology industries, and he has worked as a machinist, CNC Programmer, a variety of operational engineering positions, and support functions. Dave holds a MBA in Management Systems (Deming Scholars Program) from Fordham University and a BS in Manufacturing Engineering Technology.

In 2004, Dave was one of only 12 people worldwide selected by the W. Edwards Deming Institute® to reconfigure Dr. Deming's famous "Four Day Seminar" into the 2.5 day seminar "Out of the Crisis" and subsequently named as a training representative for [The W. Edwards Deming Institute®](http://www.wedwardsdeming.com). He is a member of American Society for Quality and a Certified Manufacturing Engineer, and an internationally published author.

CONTACT

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