



A “Where’s Waldo” Approach to Problem-solving

By Adelino de Almeida, PhD

Looking for a solution, Looking for Waldo.

If you don't know where you're going, any road will take you there. — Lewis Carroll

Those of us who have spent some time with a group trying to solve a problem or design a new product will easily identify with the overused Lewis Carroll quote. Although problem solving and innovation are not easy when tackled individually, they tend to become significantly more difficult when addressed by a group, and the difficulty is amplified when members of the group represent different disciplines. Consider the challenges present in having a multi-disciplinary group coin up a marketing strategy: the Marketers will talk of brand equity, the online folks of “engagement”, people in Operations will talk of sourcing and inventory, and those in Finance will try and figure out how the strategy will be funded and how it will generate some profit. Or at a simpler level, re-visit the difficulties you’ve experienced in writing a proposal that required the input of several internal stakeholders, or, simpler still, the difficulties in selecting the right metrics to evaluate the performance of a project. It seems that each discipline in the group is solving not just a subset of the main problem, but a distinct problem altogether.

But companies that want to thrive in a business environment that increasingly values speed and innovation *must* have the ability to use multi-disciplinary teams to solve problems and design strategies. Some companies will resort to “brain-storming” session, others will force some kind of structure on the exercise, and others still will give a senior team member the power to vet and spur the process along. Many companies will simply put the team in a room, feed them reasonable amounts of sugary and salty foods, and hope that a solution will come up before the cleaning crew shows up at the end of the day.

Admittedly these approaches work: they work in the sense that people go into a room and come out with a solution a few hours later, but they do not work as well as should be expected in that the quality of the solutions and the degree to which they are, or even can be implemented are somewhat random. For instance, brain-storming techniques are great for generating new ideas (lots of new ideas), but tend to produce “ideas” that are not necessarily “solutions” and these ideas tend to fall into two groups: *i*) those that are low value and easy to implement, and *ii*) those whose value seems high but that are nearly impossible to implement. “Pareto,” or “80/20,” are other terms that we often hear in a problem-solving context, and refer to Vilfredo Pareto’s discovery that 20% of the Italian population owned 80% of the property. This is perhaps the most abused and generalized of all economic observations: we hear it with regard to wealth distribution (even when it isn’t quite applicable), inventory units, all the way to... problem-solving! Apparently, there is some 20% in the solution that will resolve 80% of the problem. What is not entirely clear is how to measure the percentages of the solution or the problem or even if a solution should solve 100% of the problem. We can guess that the 80/20 rule is used as a metaphor for looking for an acceptable, although less than optimal, solution—a solution that addresses most of the problem. The concept would make sense were it not for the fact that 100% of the problem should be solved, not just 80%.

At any rate, the approach is a valiant step towards using the “Where’s Waldo” principle of problem-solving, and that is what we’re concerned with here.

Along the lines of the 80/20 rule, and adding a bit of brain-storming, the “Where’s Waldo” approach is about finding the simplest and fastest solution to a problem. This may not be the optimal solution, but it must solve 100% of the problem and must be obtained in a consistent manner—a manner that leverages the different modes of thinking present in a team.

This approach is named after the children’s books in which the objective is to find where a character—Waldo—is hiding among a crowd that spreads over two facing pages (a tableau). Waldo is engaged in a different activity in each tableau and the characters around him vary from “story” to “story.” There is a lot going on in each tableau but the game ends when one participant finds Waldo. As we will see,

this game serves as a great metaphor for an effective problem-solving approach: it produces simple and practical solutions that leverage the specific input from each discipline in a team. The solutions are feasible and do not over-fit the problem.

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Much like the children's activity books, good problem solving is about finding the best solution possible in a timely manner. Note that we didn't say the optimal solution, and this is what distinguishes effective problem solving from other approaches: we recognize that we are to find a good solution and that this solution may not be the optimal one.

Recognizing that this approach leads to solutions that may not be optimal might lead to a lot of opposition from the problem solving team. We are, after all, programmed to find the right solution, marry the right person, live in the right house and drive the right car. It seems almost counterintuitive that the right solution does not double as the optimal one. On the other hand, it is easy to consider that the right person for each of us is not necessarily the best looking model around or that the best profession is rocket scientist. What is the best for me may be just adequate for you, and at a deeper level, being just adequate is more than enough to make good, solid business decisions.

FINDING WALDO: KNOW WHAT HE LOOKS LIKE

The first step in our quest to finding Waldo is to have everyone agree on the approach, and, in a nutshell, the approach reduces to the following: “we will look for the simplest, most obvious solution that solves the problem. We are not going to be exhaustive in our search and we are not going to be sidetracked. We are going to find Waldo and when we do, the game will be over.”

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Following this approach, it becomes critical to know what Waldo looks like. This harks back to the quote from Lewis Carroll in that we need to know what we’re looking for if we ever hope to find it. We must begin by outlining what Waldo looks like, and then we detail not only his picture, but also his relationship with the other figures in the tableau.

In more practical terms this means that the first main task for group problem-solving has to do with outlining an end state in which the problem has been solved; for instance, what will your living room look like when the furniture is rearranged (or how it should “feel” if that is all you can define at this stage)? Or how will a process work when it’s been streamlined? Or how will your supplier pool look when you’ve consolidated it? Or what will your company look like in years?

The answers to these questions are very general in the first stage. Remember that you only have to have a general idea of what Waldo looks like. You still don't know where he is, what he is doing, or what his neighbors are up to. The first pass in your solutions process has to be the definition of what you want your solution to look like. Without this definition you'll never solve the problem in an acceptable time frame. Imagine the process that you need to follow to create an implementable 3 year plan: your first step is to define a vision for your company—a description of what it will look like in the future. You then define milestones and tasks until you have a detailed, workable plan. It would be nearly impossible to start developing the plan without a vision of what it leads to. Similarly, you'll need to define what you want the plan to look like, what sections it entails, how they relate to each other, how the plan addresses the vision and so on. Defining what Waldo looks like—even if in broad strokes—is the essential first step in this process.

Effective problem-solving requires a balance between cutting through the clutter and noise and staying focused on a train of thought, all the while being able to capture unrelated information that may lead to a faster solution. This is particularly true of new product development in which the product is created as much from disciplined engineering as from a form of “blue sky” thinking that captures ideas and concepts that are truly new. And this why it is important to know what Waldo looks like from the onset—it is a sure way to keep everyone on track and sets a clear sense of direction. There is less temptation to stray when the goal is clear and everyone knows what it is.

Once you know what Waldo looks like you're able to look for him in the tableau. In reality this means that you'll be looking for a solution that is in context with the problem. You can pick up on the correct context by looking at what the other characters are doing: if they are all engaged in some urban activity it is very unlikely that Waldo will be found waterskiing (note that we don't say that it is impossible, but just that such a solution is very unlikely).

Equipped with the knowledge of what Waldo looks like and in what context you're likely to find him, you can now start actively looking for him. This next stage requires you and your team to use the principle of exclusion of parts.

Since Waldo cannot be in more than one place at the same time, exclusion of parts allows each team member to focus on one area of the tableau to look for Waldo. Alternatively, you can have all team members focusing on a given area at a time. The approach that you choose depends on the nature of the problem: if you're designing a marketing campaign, you may want to involve all the related disciplines for each step of the process, but if you're designing a building, it is best to separate the architect from the engineers given that each discipline is so different from the other and their skills so specialized. What is important at this stage is to keep participants from looking all over the tableau without discipline, and instead keep everyone in sync with the process. Begin by eliminating areas that have been scanned and where you know that there is no Waldo.

Another application of exclusion of parts is to start eliminating the Waldo look-alikes: there may be many of those but there is only one true Waldo, and this is an important distinction to bear in mind. We live in a society that values choice and options, and we carry this preference for choice to problem solving: we always like to consider several options as solutions for a given problem.

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Although in reality each problem can have more than one solution, only a very small number of those will be good enough for consideration. Notice that we are not eliminating the possibility that there will be more than one solution, but that we're gunning for only one—we could have settled on finding some other character to end the game, but we chose Waldo instead. It is great if we identify a few Waldo look-alikes as options, but we should constantly keep in mind that we end the game only by finding Waldo.

This step also entails breaking a problem into small parts, analyzing them and then agglomerating the solution into a coherent whole—a process that is crucial for complex problems. It is akin to inspecting the whole tableau and then being able to describe the story that it depicts by having examined each smaller area within it.

In a real life setting, this corresponds to taking a problem apart into its components; for example, you may want to break a company value chain into components by using some framework like Porter's Value Chain, and have a supplier-facing block of functions as well as one for the internal operations, and yet another for all functions that correspond to customer-facing ones. Then you need to take each of these components down one level of granularity and break the customer-facing set into sales, marketing, fulfillment, billing, installation, etc. You can do the same to the other two groups until you've broken the value flow down into components that are granular enough for analysis, and you can then find ways to improve the value flow by improving each of the parts. You can have everyone in the group go through this process, or you can assign it to experts in each discipline, but what is important is that each morsel be of a size that lends itself to a solid analysis and solution. Once each component has been analyzed, you'll have to have the team assemble the individual solution components into a coherent whole.

The last step in the process has everyone make sure that Waldo was indeed found. This shouldn't be particularly difficult given that the team set out by describing Waldo in broad strokes at the beginning of the session, but the reality is that after all the activities that take place to find Waldo—and particularly after taking the problem apart, solving the parts and assembling the solution—it is natural that the assembled solution looks a bit more like Frankenstein's creature than Waldo. And thus the need for this step. Think of it as the compliance and quality control that must take place once a solution is reached: compliance to ensure that the solution addresses the problem and conforms to the parameters initially defined, and also that it does so with an acceptable level of quality.

...remember that the game is over when you find Waldo, not when you also find everyone that looks like Waldo.

This step is also important to avoid over-solving the problem—remember that the game is over when you find Waldo, not when you also find everyone that looks like Waldo. What often keeps teams from either solving a problem or doing so satisfactorily is that everyone is so bent on finding the absolute best solution, and in identifying all the options, that the problem is either left unsolved or the solution is not economical. Remember that the game is about finding Waldo and only Waldo.

FALLACIES: CHEATING WHEN YOU'RE LOOKING FOR WALDO

Fallacies are the wrenches that you and other team members throw in to the gears of the process and that sabotage your work. They come about unwittingly but can cost you a good solution. Let's take a look at some of the more common and destructive:

» **Ad Hominem**

Why should you pick on your fellow players when you could be looking for Waldo? That is exactly what this fallacy is about: to attack or debase your fellow team members so that their arguments will be debased as well. Of course this is cheating and does not lead to good solutions. Even if you cannot stand a particular team member, she may still produce good ideas and offer some deep insight into how to find Waldo.

Say, for instance, that we are discussing how to target a particular demographic for a retail campaign, and at some point I venture that one of the segments is not profitable and should not be pursued. You, on the other hand, espouse the theory that the group is an influencer and can lead others to purchase. The discussion has been going on for awhile and it is becoming clear that we are far from agreeing. At this stage I can pull an *ad hominem* and accuse you of not knowing a thing about retail. With this strategy I am trying to blunt the validity your argument by debasing your credibility. A better approach would be to try and either focus on the common points of our approaches, or see how elements of each approach paint a clearer picture of the desired end solution.

As much as we tend to personalize what happens around us, the reality is that the quality of a person's output is not entirely correlated with our liking that person. Allowing team members to fall for and act on this fallacy leads to losing much good content and undermines team morale. As much as we may hate to admit it, even the worst and most irritating players may actually offer some insight to help us find Waldo, and it is our job—everyone's job—not to exclude someone's input.

In the end, it may even be that some of the players we like the least spot Waldo before everyone else.

» **Argumentum ad Verecundiam (appeal to authority)**

This mouthful is Latin for a fallacy that is the direct opposite of the *ad hominem*: it refers to my referencing my authority as the leader of the project to debase someone else's input. Imagine that you venture a way by which we can simplify a process and thus lead to a faster time to market for a new product launch, and I am the project manager and want to press my time-saving initiative instead. I use this fallacy if I claim that my argument is the right one because I am the boss (or because I have more experience, or any other quality that is extraneous to the argument).

This is a fallacy that is powerfully disruptive even when not explicitly called. How many times have you felt compelled to abandon your suggestions and train of thought and follow those of your boss just because she's the boss?

Awareness is the first step in avoiding this trap. It is also important to have managers commit to considering other points of view and insuring some healthy discussion.

» **Post hoc, ergo, propter hoc**

Another Latin mouthful translates rather loosely as: if B is in sequence or follows A, then A implies B—and as intellectual as it may sound, it is plain wrong. The fact that one action precedes another does not mean that the precedent implies the consequent.

This fallacy occurs naturally and is often unrelated to the rank of team members, or to lack of awareness, but rather seems that human nature leads us to commit it. A cousin of this fallacy is our mistaking correlation with causation: correlation expresses the likelihood that two phenomena behave in the same or opposite direction, whereas causation means that one generates the other. For example, think that if the phase of the moon is related with the number of births, then it is just as valid to say that the number of births is equally correlated with the phase of the moon. We might be tempted to imply that the phase of the moon causes the number of births to spike, but given that correlation is

the only evidence that we have, we should also consider that it is the increased number of births that causes the moon phase to change.

This is a very enticing fallacy and problem-solvers need to run frequent process checks to avoid it.

» **Hasty generalization and Propter hoc**

This is perhaps one of the most popular fallacies. We find it not just in problem solving but in every facet of life, and it has to do with generalizing a quality beyond what is reasonable. As an example, consider all the celebrities that extend beyond their status into politics, or that successful business-people sometimes extend their status into celebrity. Think of Bono of the U2 rock group fame that tries to double as economist, proposing that wealthy nations forego on collecting African debt. Think also of the countless successful entrepreneurs that want to be seen as successful at something else (athletes, golfers, lovers), or of actors that double as politicians...the list can extend for a long while.

On a smaller scale this is a fallacy that tempts us into believing that a medication that is effective in mice is also effective in humans, given that both species are mammals, or that a web designer knows a lot about IT because web designers are heavy IT clients

Hasty generalization is exceedingly common and is one of the fallacies you should always be aware of. 📌

ABOUT THE AUTHOR

Adelino de Almeida, PhD is a marketing professional dedicated to increasing the profitability of his clients through fact-based decision-making and analytics. He has nearly two decades of marketing and business management experience in the Retail, Manufacturing, Enterprise Software and Automotive Industries. He's the author of the Profitable Marketing blog at <http://adelino.typepad.com>. Dr. de Almeida holds a PhD in Civil Engineering from the University of Colorado at Boulder and is a registered Professional Engineer in Colorado.

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