

Contradictions - Are They "Hard" or "Soft"?

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Last month we left you with some problems relating to contradiction analysis. Let's take a look at them from several different levels. First I asked you to think about your own job and its contradictions. Let's look at mine! Since I don't work for a company in the traditional sense, the question I asked you regarding contradiction conflicts between your view and your employer's view may not be relevant, but everyone has a boss. So in my context, let's consider my wife as the boss who wishes I brought home more money to allow her mother to spend more time with us (ouch!)

PAST	PRESENT	FUTURE
<u>SUPER-SYSTEM</u>		
ALL CONSULTANTS USING OUTDATED METHODS	ALL TRIZ CONSULTANTS	SPECIALIZED TRIZ CONSULTING ON DEMAND
<u>SYSTEM</u>		
INDUSTRIAL CAREER	TRIZ CONSULTANT	RICH AND FAMOUS INNOVATION CONSULTANT

What's my view of the contradictions in the above system? Well, certainly we have a basic contradiction that all consultants have in delivery of material and programs vs. time in selling those same programs. You can't be doing two things at the same time, can you? Or can you? Don't web sites, publications you have written, etc. sell when you can't? Search engines can be optimized via keywords and money (!) to highlight your business. Looking above, there is on-demand consulting. Most of us do consulting on some kind of contracted basis; whether it be for a few days of training or a block of time to solve a problem off line. What if someone could just call you up at a moment's notice and get all the help they wanted? What would someone pay for that? Would that resolve any contradictions? No more travel? How about web based training-a lot less time, but maybe less effective? How would we resolve that contradiction?

Secondly, we asked you to consider yourself as the chairperson of your local homeowners' association-are you seeing all the contradictions? An individual homeowner may have a contradiction between your desire to change the exterior color of your house to chartreuse and the covenants that say a committee has to approve and maybe they only like pastel colors. Another may want to paint their driveway to prevent mildew buildup and the covenants say that a driveway can't be painted. Is mildew build up a "paint"? A coating? The homeowners association is looking at the whole neighborhood and property values as a whole. The city (one level above) probably doesn't care at all! It just cares about basic construction and sidewalk regulations. In general we have contradictions between individual homeowner tastes and that of the community as a whole.

If you're the owner of a rental car franchise, you see the contradictions resulting from a surge in local demands and the national franchise may not even be aware that your local community has on special days (San Jacinto Day in Texas, Freedom Day in Boston). Do you have the freedom to raise rates then? Is the type of cars you are allowed to buy specific to the local market? The airport management wants to maximize tax revenues, which argues in favor of larger cars that rent for a higher daily rate. The consumers want smaller cars to save money, but the airport concession ground size isn't that much different for either. As a franchise owner, how much freedom do you have to sell and purchase vehicles to match short term trends in consumer demand? Each "level" in this system has different contradictions as well as different views of resources and ideality. As we've said before, no right or wrong about any of these views, but thinking about all of them is critical-and the search for the common ground for business rather than purely technical solutions.

Now to this month's topic-hard or soft contradictions. Very frequently, after analyzing a problem for an organization, we find that the issues are not all technical in nature. Even if we feel they are not, we are often asked whether the 40 Principles and contradiction table are valid for non-technical contradictions. There have been some special contradiction tables developed for business and management but some of the jargon can be confusing and the number of parameters is different. This is not to say these aren't useful, but people always have the original contradiction table, so if we can start with this, it makes things a bit easier.

First, how might we use the basic table for non-technical applications? It's not always easy to do the translation, but a little mental effort helps. For example, let's assume that a group is dealing with the contradiction of time to market (want to accelerate) vs. resource limitations for a new product launch. We could look at parameter #9 (speed) vs. #19 (use of resources) and find some suggestions:

1. Principal #8, anti-weight. How can we compensate for short term demands? How can we compensate with other forces? This might suggest short term contractor hiring or a higher involvement of the customer in the product launch through incentives.
2. Principal #15, dynamism. How could we make the organization required to do this launch more dynamic? Again, the use of temporary outside resources comes to mind, but what about more flexible use of internal resources? Could we get rid of the fiefdoms that exist within organizations to allow more flexible use of manpower? Could the market launch be separated in time so as to not consume the peak resource level all at once? Are there areas of the world or the country where the launch could be focused?
3. Principal #35, parameter change. Now in the technical world, we think about phase changes here, but in this world, intensity, concentration, and flexibility come to mind. We've already discussed flexibility (third time this has come up, suggesting we look seriously at this concept!), but what about intensity? Overtime? Bonuses for early delivery? Borrowing from other departments (mentioned above as well).
4. Principal #38, strong oxidants. Now in the technical world, we are prompted to think about oxygen vs. air, ozone vs. oxygen, and ionization. Doesn't this suggest incentives for more intense behavior and goal setting? Bonuses and longer hours (same as before).

In this same problem, we could have the conflict of wanting speed (again, #9) vs. stress/pressure (meaning on the individual/organization), #11. We find these suggestions:

1. Principal #6, universality. How can we make a "part" perform more than one function? Do we have under utilized general resources in accounting that could be used on this special project? Are there individual that have special skills applicable here? Do we even know what are employee skill inventory looks like? Have we ever asked?
2. Principle #18, mechanical vibration. We aren't talking about piezoelectrics in this case, but about resonance. Does everyone on this team "resonate" with the goal? If so, how can we use this? If not, why not? Replace this person?
3. Principle, #38, strong oxidants. Can we reward this extra effort in a special way so that individuals are more concerned about the long term payoff to themselves (stock options?) and their company?
4. Principal #40, composite materials. We aren't talking about composites in the materials sense but in an organizational sense. Is everyone on the team thinking alike? Same behavior and problem solving styles (these can be accurately measured by the way)? How about some fresh, different looks at the situation and its challenges?

We could also have looked at this problem with the TRIZ separation principles (again I don't want to debate how many!). Let's look at some and now they might suggest ideas, some of which strongly overlap with suggestions provided above:

1. Separation in time. Can the resources perceived to be needed broken down into time increments that might make their availability easier to accomplish? We often see people asking for an additional person without quantifying what they asking for. Is this full time?
2. Separation in space. It's always nice to have all the team members and resources at our fingertip and control, but we've all seen current examples of global collaboration through Internet meeting tools, Emails, etc. Are the resources we need overseas?
3. Separation upon condition. Let's ramp up the resources only when they are truly needed possibly with a retainer contract with an outside firm
4. Separation between parts and the whole. Can the core team borrow or rent resources from the larger corporation or other product or project areas

You can see that the use of either the contradiction table or the separation principles produces similar ideas, but different shades of them. Don't debate forever what kind of a contradiction you have-use both tools! It doesn't take that much time.

The next two columns will further explore the use of the contradiction table and the separation principles in additional application areas, so start thinking!

Homework assignments for next month:

Situation 1: Identify a business problem that you have and analyze it with both the contradiction table and 40 principles, as well as with the separation principles. See what commonality you find.

Situation 2: You are the charged with implementing TRIZ within your organization after participating in an introductory workshop. What are the contradictions you face in this task? Come up with some ideas.

Situation 3: You are the owner of a contract professional resources firm. You know that companies are struggling with limitations of resources. How can use TRIZ thinking to improve your sales pitch?

NEXT MONTH: Translation of Inventive Principles to the "Soft Side"