

# Translation of Inventive Principles to the "Soft Side" (I)

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Last month we left you with some problems to consider:

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.

Let's take a look at a typical problem encountered when introducing TRIZ into an organization. What is one of the contradictions we see encountered? We want the SPEED (parameter #9 in the contradiction table) and when we attempt this we find that permanence of the adoption falls off, DURATION OF ACTION OF A NON\_MOVING OBJECT (#15 in the contradiction table). We see four suggested principles to consider: local quality, periodic action, merging, and parameter change. Local quality could suggest that we introduce TRIZ intensely in one department and then adopt it elsewhere after establishing credibility. Merging would suggest combining with another well established, credible program such as QFD, or Six Sigma we see this being done in numerous companies. Parameter change could suggest that we "rename" TRIZ something more readily understandable this again has been done by a number of companies.

Situation 2: You are 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.

There are certainly challenges to egos in adopting TRIZ as the suggestion that a problem may have already been solved is threatening to a career scientist who has been working on something for a long time. It is important to build the background and anticipate this reaction and show how learnings from other fields can increase the speed of invention and allow a creative person to be even more creative. The time issue comes up again. TRIZ is a heavily front end loaded process taking a large amount of time to define a problem properly. When this objection is encountered, it is good to ask people to inventory and take stock of the amount of time and money that has been spent resolving problems because they weren't well defined and the money that was spent on solutions that turned out later to be already known. Taking stock of these expenditures can help in the selling and use of TRIZ.

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?

How about making sure the customer understands all the benefits of having help ONLY when it is needed, not needing to worry about personnel policies, payroll issues, etc.?

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When we first look at the contradiction table and the inventive principles, we are tempted to look at the words and not see how to connect them with business, organizational, and people problems and just say they aren't applicable. However, as was demonstrated in a proposed answer to the first homework problem from the last issue, it's not impossible it just takes some mental effort and a little imagination. An excellent TRIZ Journal article reviewing the 40 principles and their "translation" into business terms can be found at the [www.triz-journal.com](http://www.triz-journal.com) web site. It's in the September 1999 issue. In addition, an additional resource in this area is the business contradiction table developed by Darrell Mann. It's a 31X31 matrix and uses parameters unlike those in the original contradiction table and the terminology is a little different than used in many US businesses.

Advance caveat: I realize that in various versions of the contradiction table that the phrases used to describe the various principles (nesting vs. Matroiska doll for example) differ and I have no interest in getting into a debate about which is "correct". Principle # 7 is always principle #7 (except in the Creax expanded contradiction table, so beware when "translating" to/from)! Use whatever phrase is comfortable for you and that makes the principle understandable to you.

Let's take a look at a few of the 40 principles (TRIZ Journal, July 1999) and we'll continue the discussion next week with some more.

Principle #1: Segmentation. This could mean separating almost anything (goals, organizations, sales plans, performance appraisals, merit pay increases, stock options, customer visits) into segments, each of which might deserve a different approach or strategy. How often do we use the "one size fits all approach"? It's so much easier, isn't it? Individuals all like to consider themselves special and anything we can do to personalize our interactions with anyone will improve ANY situation. Don't we segment markets and price accordingly? The next time you go the store, go to the "over the counter" drug area and look at the price of over the counter sleep aids containing 25 mg tablets of the active ingredient diphenhydramine hydrochloride HCl. Now close by, look at the price of "decongestant" tablets. You'll see it's exactly the same ingredient and sells for (at least in Tampa when we've got spring molds and pollen) about \$1 more. Evidently market research has shown that people are willing to pay more for relieving itchy eyes and runny noses than they are to sleep. Go figure!

Principle #2: Taking Out. How many layers of bureaucracy are in organizations that are not needed? How many people have to be involved before a customer receives a satisfactory resolution to a product performance issue?

Principle #3: Local Quality: In many situations it is beneficial to have personal sales and technical service representation around major industry or customer. Look at the number of vendor offices in Bentonville, AR directly surrounding Wal-Mart. Did you know that there is non-stop air service between Bentonville and Los Angeles? Are your managers tucked away in fancy private offices or do they get out on the actual floor once in a while? I don't know about you, but putting aside how you feel about the situation at Walter Reed Army hospital, I found it incredible that the senior military commander, to whom the direct manager reported to, whose

office was across the street, said he hadn't been "over there".

Principle #5: Merging. In corporate America, there is the phenomenon that I like to call the "program of the month". With each new initiative, employees are told this is "#1 priority". Everything can't be #1. I used to ask my bosses after hearing this, "what's now number 2?" to at least begin a dialog about priorities. Or ask, "what do you want me to stop doing?" Merging new initiatives with existing ones, when it makes sense, is a way of overcoming this obstacle. This has happened with many TRIZ implementations in such a way as to almost make TRIZ indistinguishable from its overriding initiative (such as Six Sigma, DFSS, Lean, etc.)

Principle #10: Preliminary action. If you know there is bad business news coming, how can you prepare your employees and stockholders so that there is not a violent reaction? Do you build up inventory ahead of a potential labor action, a shortage of raw material, advance purchase options (like Southwest Airlines was smart enough to do this past year, saving millions)

Principle #11: Beforehand Cushioning. We use TRIZ in reverse (Proactive Failure Analysis) to develop business continuity plans for businesses in Florida who face the threat of hurricanes and flooding.

Principle #12: Skipping. In the traditional technical world of TRIZ applications, this usually means skipping over/ eliminating a hazardous step or operation in a process. Spending money on anything that is not really necessary is a tremendous waste of resources. How often do we see some sort of inherited process forced on a new situation or process where it was never intended to be applied, or the use of some form developed for another use with 20 data entries when this "new" use of the form only needs 5 of them? Let's get rid of the stuff we don't need, including approvals and authorizations that were instituted for ego satisfaction rather than a substantive purpose. In technology development, we frequently get trapped in a sequence plan involving the scale up of new technology. There have been some excellent success in skipping some of these steps (risk is involved).

Principle #13: The Other Way Around. How can you get the customer to call you rather than you having to chase the customer?

Principle #15: Dynamics and Dynamism: Is your organizational structure constant at all times? Should it be variable based on a change in business conditions? Does a change in response to customer needs or market conditions need five levels of approval and ten months to accomplish? Why?

Principle #19: Periodic Action: How often do you stimulate your organization and your people with artificial crises? Simulated emergencies (like a flu pandemic!). What would you learn?

That will get you started. As you can see, it's not all that difficult to "translate" the principles into another setting. With the translation of the parameters we discussed last month, you're now on your way to expand your use of TRIZ thinking on the soft side!

Homework: Take three additional inventive principles (not discussed in this column) and come

up with translations for the non-technical and business world.

**NEXT MONTH: Translation of Inventive Principles to the "Soft Side" (II)**