Looking for Resources in the Soft World
System / Sub-system / Super-system

Jack Hipple

The last two months we have discussed the difference in using TRIZ principles of ideality and system analysis in the management and organizational area. We have seen that differences in perspective can challenge our conventional "one view" of what the ideal final result (IFR) and the differences in viewing a sub-system/super-system diagram. We left you with two challenges to consider:

Situation 1: System analysis of copiers from the standpoint of Xerox. Let's take a look at one possible view of this:

LEVEL OF PROBLEM SOLVING AND PLANNING ANALYSIS: THE COPIER SYSTEM		
PAST	PRESENT	FUTURE
SUPER-SYSTEM		
INDIVIDUALS IN A NON-TEAM SETTING REQUIRING INFORMATION TO COLLABORATE	TEAM NEED FOR PAPER COPIES	INSTANT REMOTE ACCESS TO INFORMATION VIA WIRELESS DEVICES
SYSTEM		
CARBON PAPER	THE COPIER	MULTI-FACETED COPER MACHINE
SUB-SYSTEM		
CARBONLESS PAPERCARBON PAPER	COPIER DRUM AND OTHER PARTS	FEWER PARTS THAT MAINTAIN THEMSELVES

If you're Xerox, what might you consider? Are you in the "Blackberry" business? Should you be? What could you "invent" that would take wireless transmitted information and analyze and/or duplicate it? Provide it only to the person who needs it?

Situation 2: Supplier relationship discussion. You could present a picture of the total business including the system above you as a customer and discuss with your supplier what might happen if these costs are passed on. Might that prompt the ultimate customer to replace the combined system that you are supplying? Can we turn the discussion around and discuss what additional functionality could be added to provide more value to the ultimate customer that could enable higher prices for everyone?

Let's now take a look at how, in the organizational and management area, how our view of

resources can also dramatically affect how we use TRIZ thinking. Let's consider the hospital/medical treatment system analysis we started last month. Here's one summary view of the system analysis that we presented last month:

LEVEL OF PROBLEM SOLVING AND PLANNING ANALYSIS: A MEDICAL SITUATION		
PAST	PRESENT	FUTURE
SUPER-SYSTEM		
HOME SURGERY OR ELIXIRS	THE SURGICAL ROOM OR THE HOSPITAL BED	REMOTE SURGERY VIA VIDEO
SYSTEM		
GENERAL POPULATION	THE INDIVUDAL PATIENT	CUSTOMIZED INDIVIDUAL TREATMENT
SUB-SYSTEM		
GENERAL NON-SPECIFIC TREATMENT	THE PATIENT'S "ORGANS" OR BLOOD	BIOLOGICAL COMPONENT TREATMENT

We discussed briefly how patients, hospitals, and insurance companies all might view this analysis differently from an ideal result standpoint. How would they view it from a TRIZ resources viewpoint? Let's consider a summary list of resources we frequently use:

1. Space
2. Time (before, during, after)
3. Fields
4. Substances and materials
5. Functional field conversion (electrical field always generates a magnetic field)
6. Information
7. People skills and interests

If you are the hospital administrator, what might be some of the items on your list?

1. Space--the hospital facilities, the beds and equipment, etc.
2. Time--time of patient stay, time between billing and payment, time prior to patient arrival at hospital
3. Fields-chemical and mechanical devices, gas cylinders, and anti-biotic solutions used
4. Substances and materials-purchased supplies such as linens, prescriptions, gowns, etc., money
5. Functional field conversion-patient movement generating alarms, electrical/magnetic fields acting on pacemakers
6. Information-previous health history, patient data monitored, insurance reimbursement process and allowed stay

7. People skills and interests-surgical skills on site, on call, nurses' training, patient knowledge of conditions

If you're the patient, what's your list?

1. Space-the room, the bed space, pockets in the gown, bedside stand space, table for feeding
2. Time-24 hours (awake and asleep)
3. Fields-thermal field from blankets, room heaters or air conditioning, solar radiation from window
4. Substances and materials-reading materials, personal effects, clothing, money, insurance policy, body composition at any given time, money
5. Function field conversion-illness causing fever (temperature rise), walking or movement causing pain, pressing call button to summon help
6. Information-status of treatment, pain level, time of day, number of nurse visits, performance level of hospital in a given area
7. People skills and interests-knowledge of medical history, technical knowledge of disease or illness, communication abilities

If you're the insurance company, what's your list?

1. Space-your office, any on-site office presence
2. Time-billing time from hospital, time value of money, status of premium payment, amount of deductible for a given patient and procedure, history of any particular hospital in any given surgical or treatment area
3. Fields-in a very general sense, the healthcare environment
4. Substances and materials-paper and electronic information, money
5. Functional field conversion-not necessarily technical, but billing produces a payment (possibly with a time delay)
6. Information-patient's health history, hospital cost record, doctor cost record, history and policy on payments
7. People skills and interests-billing staff history and understanding of hospital stays (has anyone summarizing a bill ever had a hospital stay?)

Now, you may not agree with this list, but the point is that they are, for the most part, quite different. There's no right or wrong about any of the lists-just the fact that they are different. If we are problem solving in this environment, we need to recognize the fact that these lists are different and try to understand what they are. One potential use of such a thinking exercise is to identify areas of commonality (Note: this could also be done for the definition of Ideal Final Result as well).

Where is there overlap in these lists? One of the key areas is information. If all three parties in this situation analysis had access to more and common information, everyone would get closer to their idea state. Now, we are all used to filling out health history information forms when we visit a doctor or hospital, but how much time is spent really analyzing them? How much time and money could be saved (a more ideal state, at least from the patients' and insurance companies'

views) if this information was gathered more completely and used more comprehensively? So from a TRIZ perspective, we might ask how could we design a more ideal health history and information collection and analysis system? This would benefit EVERYONE in the system-the hospital and doctor (less chance of malpractice suits, better patient care), the patient (better care), and the insurance company (less liability, shorter stays from more accurate care. Now we spent less than 10 minutes analyzing this from a TRIZ perspective and now, after decades of excess cost in the US health system, we see this getting the proper emphasis that it deserves. Of course, those of us in the TRIZ business have seen this kind of thing before-breakthrough ideas can bed generated in far less time and years before they become obvious to others or through other techniques.

Homework assignment for next month:

Situation 1: Develop a 9-Box diagram for your job and develop a list of resources at each level. How might you take advantage of resource analysis at the level above and the level below?

Situation 2: Develop a simple strategic 9-Bopx for Microsoft Corporation and develop a list of resources for the parties at each level.

NEXT MONTH: Contradictions - Do We See Them All?