SMART CASES FOR BUSINESS TRIZ
About parameter models and thinking errors

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2021 Business
How do you model business or quality issues?
What we did

We reversed objects with parameters in a function attribute analysis model (principle 13)
From function to parameter model

Subject (parameter A)  \rightarrow\text{Specific Function (parameter B)} \rightarrow \text{Object (parameter C)}

parameter A (Subject)  \rightarrow \text{General(ised) Function} \rightarrow \text{parameter C (Object)}

parameter B (specific function)  \rightarrow \text{General(ised) Function}
Graphical language

Attribute A external/supersystem
Attributer A internal/system
Attributer B and C are part of A attribute
A=function(B,C)
Too much A leads to/determines to B
Too little C leads to D
Inprobable link between E & F
Too slow/fast A leads to B
“harmful” A leads to B

No sentence in box like in RCA+, CECA, ..
Only attribute and objects/function between brackets
It reads as a sentence
Example 1 Problem: distribution of garden material

A garden material company wishes to achieve an improvement in the total order processing from 6.5 days to a maximum of 72 hours (assumed with 3 shifts or 3 days)

- # orders: 4758
  - gem dlt: 6.77 days
  - max dlt: 20 days

- Aantal orders: 6274
  - gem dlt: 19.30 days
  - max dlt: 248 days
Finding optimum load

When drawing up the route, conflicts arise between the zones eg do we drive from Antwerp to Sint-Niklaas or via Ghent? In other words, there are overlaps
Solution: external distributor

<table>
<thead>
<tr>
<th>materiële/direct</th>
<th>Totale kost</th>
<th>verschil met huidige kosten</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRD LOGISTIEK kost op jaarbasis per pallet EXTREEM</td>
<td>508.760,00 €</td>
<td>70.766,50 €</td>
</tr>
</tbody>
</table>

From 6 days to 1 day
It ain’t what you don’t know that gets you in trouble, it’s what you know for sure that just ain’t so!

Mark Twain

Thinking error
A parameter chosen within the company, leading to the creation of conflicts that affects the customer.

The parameter wasn’t asked by customer.
What we learned

• Exploding?
• General (adapt, change, modify) & generalised (start/stop, attract/repluse, increase/decrease) are used specific functions (heat, melt, moves, flows,..)
• Don’t note the verb anymore
• Customer is “present”
• Pragmatic choice of parameters being used
What we learned: Aspects of parameters

• Free/independent
  • parameters don’t overlap
  • linear independent
  • no parameter is not a more broadly defined as compared to another (examples)

• Span
  • entire space can be defined
  • Linear independent & minimal set to describe the vector space

• Can whole (business) space be determined? Need for a pragmatic approach to choose most specific.
Example Problem 2: Architect company tender gain, sort of sales

Company wishes to achieve an improvement in hours spent on tender processing & winning tenders (hitrate now 40%)

- Tender costs
  - T.o.v. total cost (HIT): 22%
  - T.o.v. total cost (no HIT): 96.60%
    - Challenges: 16%
    - Paid tenders: 11%
    - Without tender: 38%
    - Tender: 54%

- Hitrate tenders: (43/144 = 30%)
- Average number of hours/tender: 80
Which design has the most chance to get an OK from the jury, after 10” or 10 days?

Desicion = function (difference(question/answer), connected network)
Example 2 Solution: Facts & figures & conclusions

Conclusion/solution:
• Prior contact with customer: 97% success rate (quotes won)
  • 28% of projects won are canceled (4M €). 15% of this is due to subsidies.
  • Conversely: 4 projects lost to selected projects
• 51% of failed offers: no prior contact (? € or 8M €)
• Company hired 2 extra people to create contacts with town colleges etc.
What we learned:
Aspects of parameters

• Direct or indirect parameter
• Label attributes (customer/company, measured, standard, automated/manual)
• Link to para-scientific formulas
Conclusion

- Attributes can describe business “untangeables” easier
- Pragmatic
- Free & span
- Thinking error
Building a model in operational zone & time

1. Describe the states of the system (supersystem – subsystem) in relation to the objective / product (error)
2. Define what the parameters are from your customers perspective
3. Select the product and process parameters relevant to the analysis per condition
4. Determine the relationships between all parameters
5. Make use of the indefinite verbs: A “gives / changes / reduces / starts” B
6. The thickness of the arrow prints: too much, harms, too little
7. Draw the arrows in the right direction Check the sentence “Too much Parameter A leads to / changes Parameter B”