SMART CASES FOR BUSINESS TRIZ About parameter models and thinking errors

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### How do you model business or quality issues?

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### What we did

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

#### From function to parameter model





#### Graphical language



Attribute A external/supersysteem

Attributer A internal/systeem

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)



#### 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





#### Parameter model (attribute)



### Solution: external distributer





It ain't what you don't know that gets you in trouble , it what you know for sure that just ain't so! Mark Twain

Thinking error

#### 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/stops, 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



#### Example 2: Parameter model



Desicion = function (difference(question/asnwer), connected network)

## Example 2 Solution: Facts & figures & conclusions



#### **Conclusion/solution:**

- Prioir 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 prioir 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

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### 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 you 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"

