# The WUMM Project
# Semantic Data and Innovation Management

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# The WUMM-Project

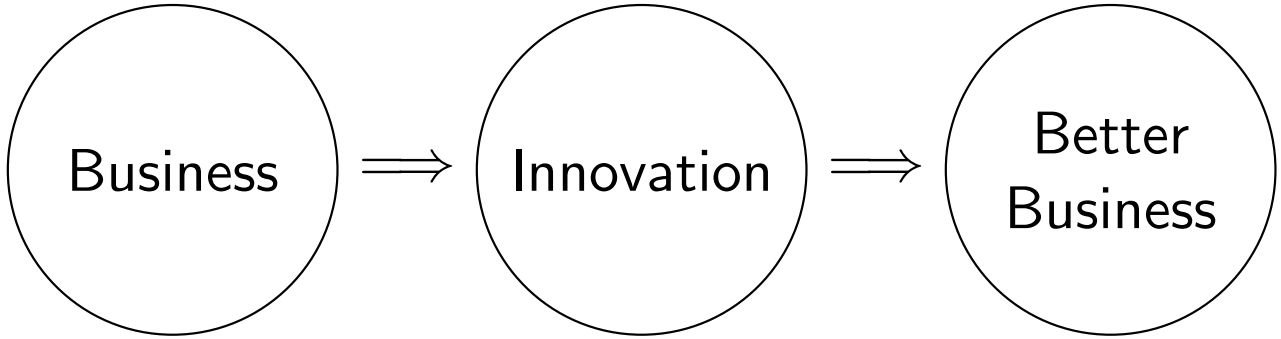
WUMM abbreviates **W***idersprüche* **U***nd* **M***anagement-* **M***ethoden* (Contradictions and Management Methods)

WUMM is designed to form the theoretical core of an innovation network in Middle Germany (Region Mitteldeutschland). Under such an open brand, we want to collect relevant concepts and materials and make them available to the general public.

- `http://leipzig-netz.de/index.php5/WUMM`
  – Wiki (in German)
- `https://wumm-project.github.io/`
  – github Pages (in English)
- `https://github.com/wumm-project/`
  – github organzational account

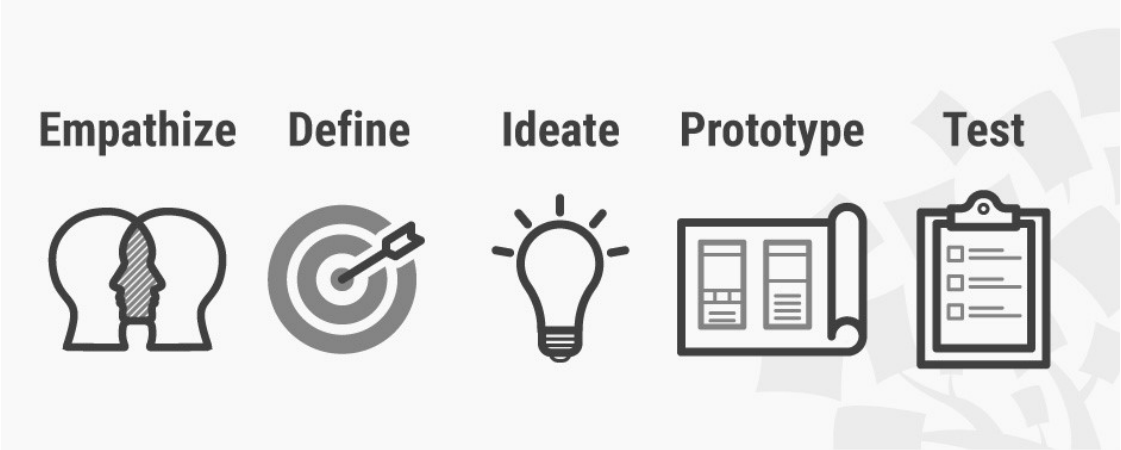
# The Generic Innovation Problem

**Innovation** is a planned and controlled **change** in a social system through the application of new ideas and techniques to **improve its performance** with respect to a **given goal**.



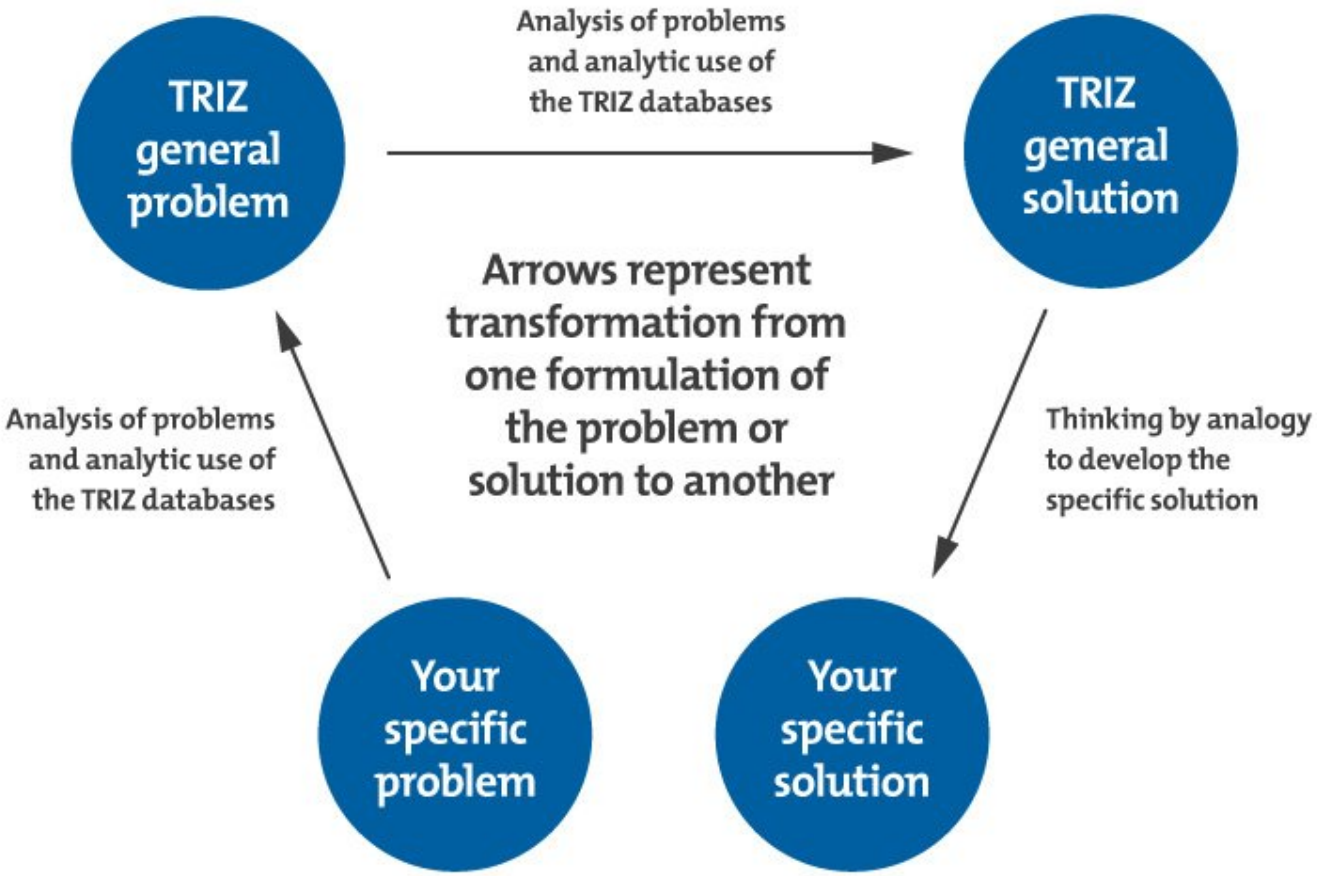
# Design Thinking

Learn more about your business (or the business of the partners that you serve)




Design thinking is more than just a creative process. What was originally developed as an innovation method for products and services at Stanford is now becoming a whole new way of seeing people in relation to work, thinking about the concept of work, and asking how we live, learn and live in the 21st century want to work. The power of Design Thinking is to enable new and surprising forms of creative collaboration. We-intelligence is the new buzzword, collaboration becomes the basis for a new working consciousness. (`https://hpi.de/school-of-design-thinking/design-thinking.html`)

# TRIZ as Structured Innovation Approaches



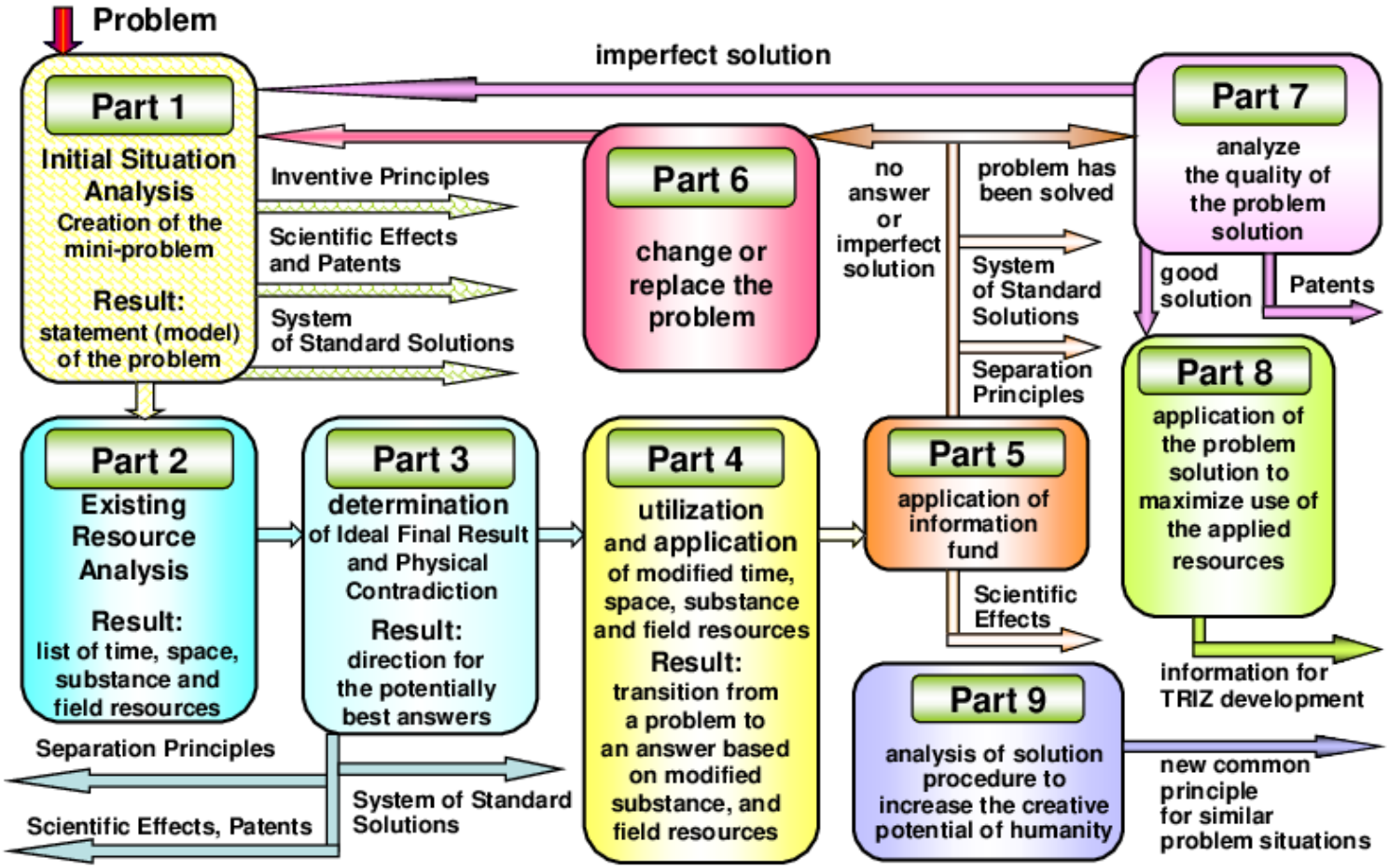
# Innovation Pathway Model

The pathway model (from ProHEAL) distinguishes between three problem levels in an Innovation Project.

- At the *administrative level*, the problem is analyzed in the trade-off between potential needs for solutions (requirement analysis) and the state of technology in a personal and process-related view. $\rightarrow$ **Basic Variant**.
- At the *technological level*, all facts are analyzed that concern the technical system of the basic variant, his structure, function, behavior and environment. $\rightarrow$ **Working Principle**.
- On the *physical level*, all facts are analyzed that concern the working principle, the conditions for its technical use as well as its theoretical and experimental basis.

# Structure of ARIZ-85C

## Basic Flow of Problem Solving Using All TRIZ Elements

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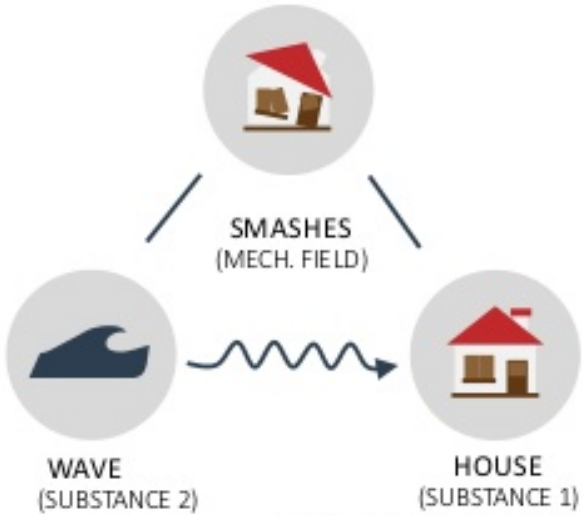
# SUBSTANCE-FIELD ANALYSIS

## Approach

- Within the operative zone, all substances are captured. The most important elements are defined and transferred to the substance-field model.
- It consists of Substance 1 (S1) and Substance 2 (S2) and one field to exemplify the interrelation. The impact flow is exemplified with arrows.

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# TRIZ – The Sufield Method

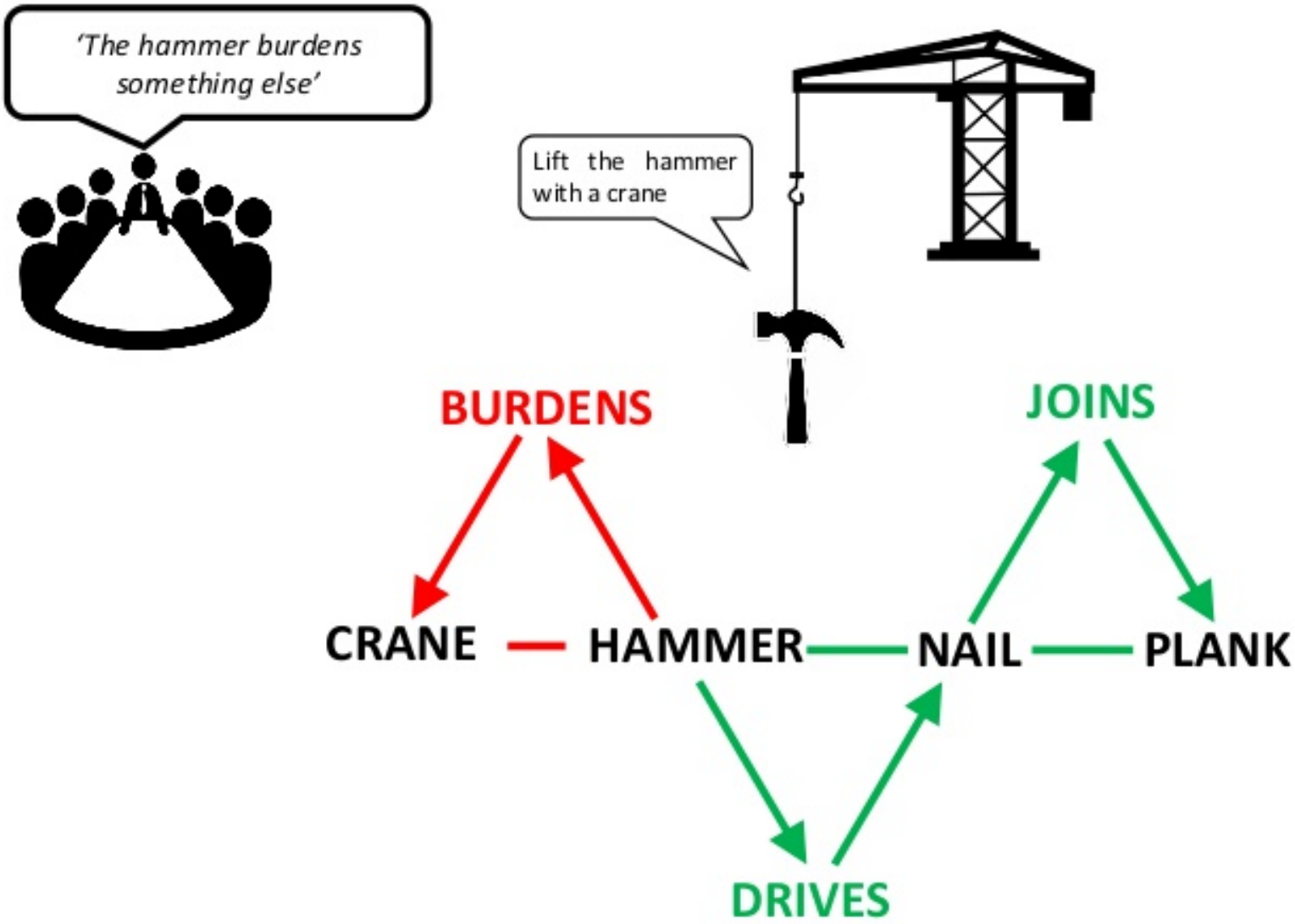
When describing functions, one part of your system must change another

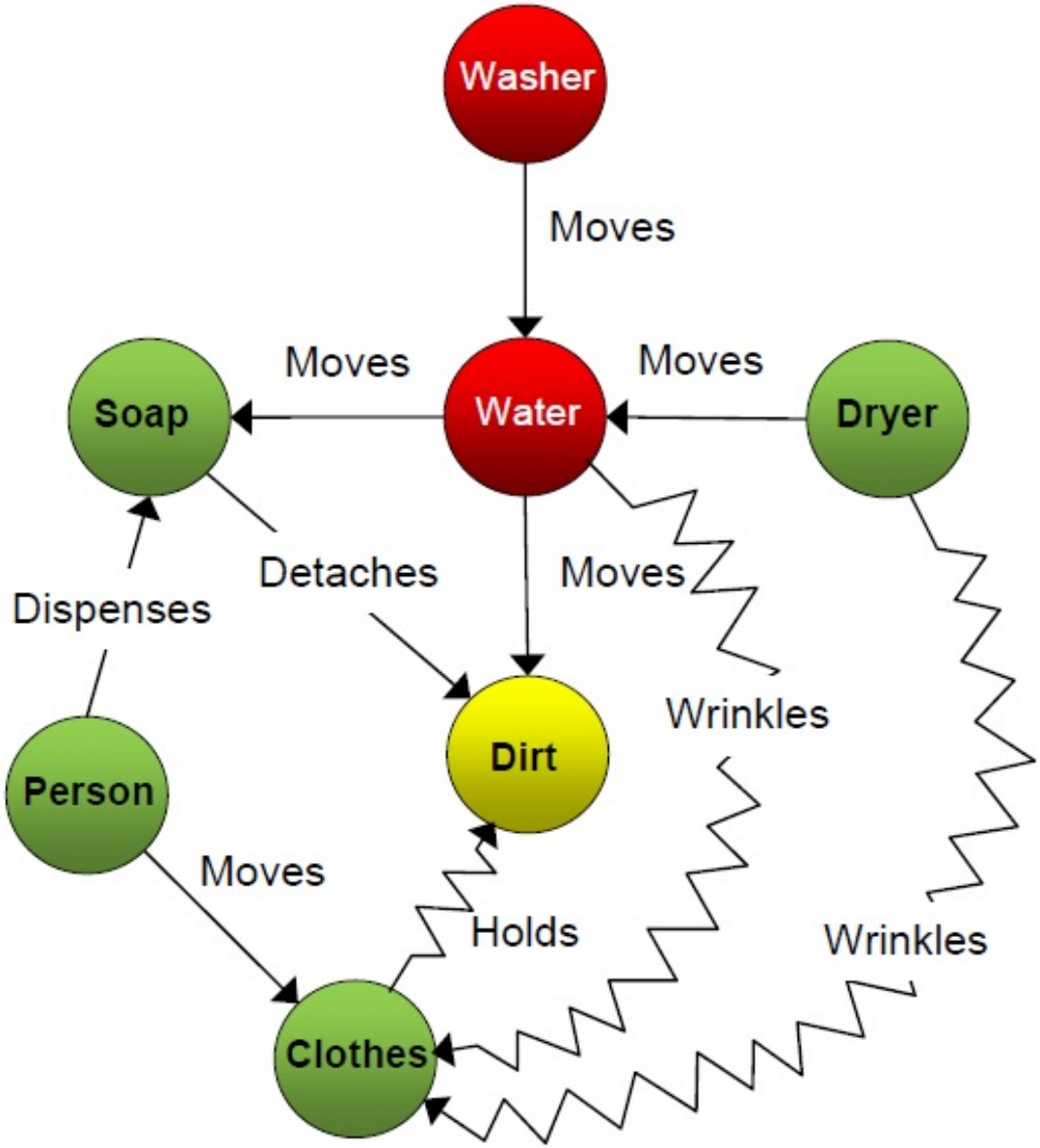
**noun** *verb* **noun**

**this** *changes* **that**

**this** *benefits* **that**

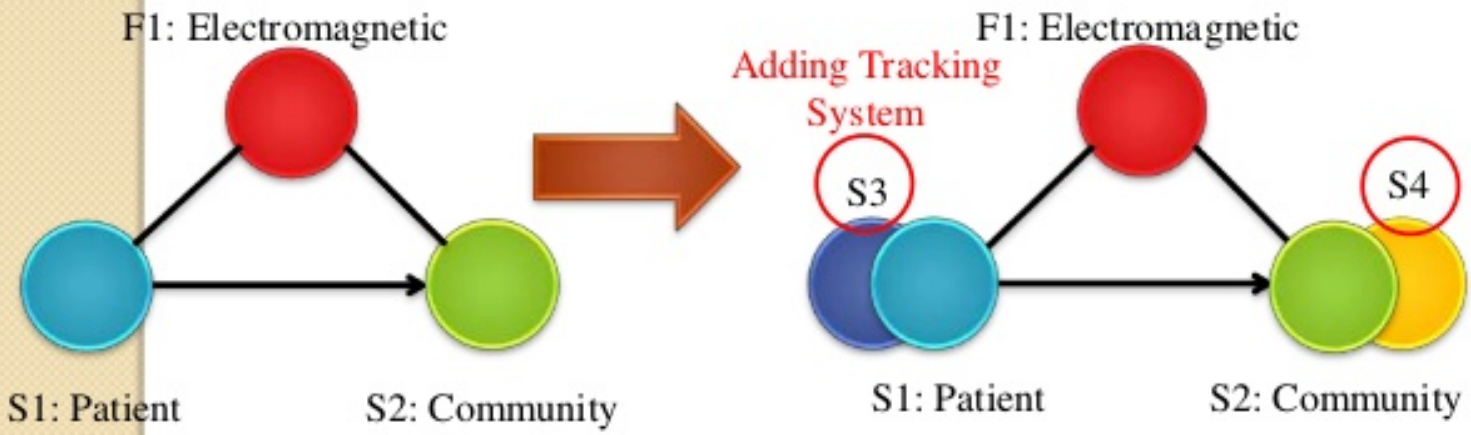
**this** *harms* **that**


'The hammer burdens something else'
Lift the hammer with a crane
BURDENS
JOINS
CRANE
HAMMER
NAIL
PLANK
DRIVES


Washer
Moves
Moves
Moves
Soap
Water
Dryer
Dispenses
Detaches
Moves
Wrinkles
Dirt
Person
Moves
Holds
Wrinkles
Clothes

# Su-Field Model

- Classifying to be Ineffective Su-Field
- Class 2 (Developing the substance-field system), solution 2.1.2 (Double Su-Field Model) under the group of Complex Su-Field was selected.



# 76 Standard Solutions

TRIZ proposes 76 Standard Solutions for the application of the Su-Field Method in different situations that are divided into 5 groups

- Group 1: Construction and decomposition of complete substance-field models
- Group 2: Improvement of substance-field models
- Group 3: transition to the super and subsystem (macro and micro level)
- Group 4: Recognition and Measurement
- Group 5: Help

`http://triz-online.de/index.php?id=5577`

`https://github.com/wumm-project/RDFData`