# 'DEFINE' PACK

This pack offers a series of questions you should be asking
during the DEFINE stage of a problem or opportunity.
The main aim is to get you to think about your situation in terms of how it is affected by TIME and SPACE
You may not be able to answer all of the questions and some may not be relevant in your particular situation.
The important thing is that you ask them.

Print the sheets out, or fill them in electronically (download available at www.systematic-innovation.com).
If you need more space, make copies or use blank pieces of paper.

Although the pack gives you a structured way of communicating your situation to others
it is up to you to use the sheets in a way that best suits the way you work.
Feel free to alter the sequence in which you complete the sheets.

Any time you obtain a new insight into your situation feel free to jump into the Solution Generation toolkit
(you can then return to your departure point later on if desired)

| Project Title | | Date | |
|---|---|---|---|
| Project Sponsor | | | |
| Project Customer | | | |
| Project Team | | | |

## Benefits

| | Where are we trying to get to (what are the goals)? | How will we know when we've got there (measures of success)? |
|---|---|---|
| Sponsor | | |
| Customer | | |
| Team | | |

# What Is The Problem?

Broader Problem

Original Problem (start here)

**Why** do I want to solve this problem?
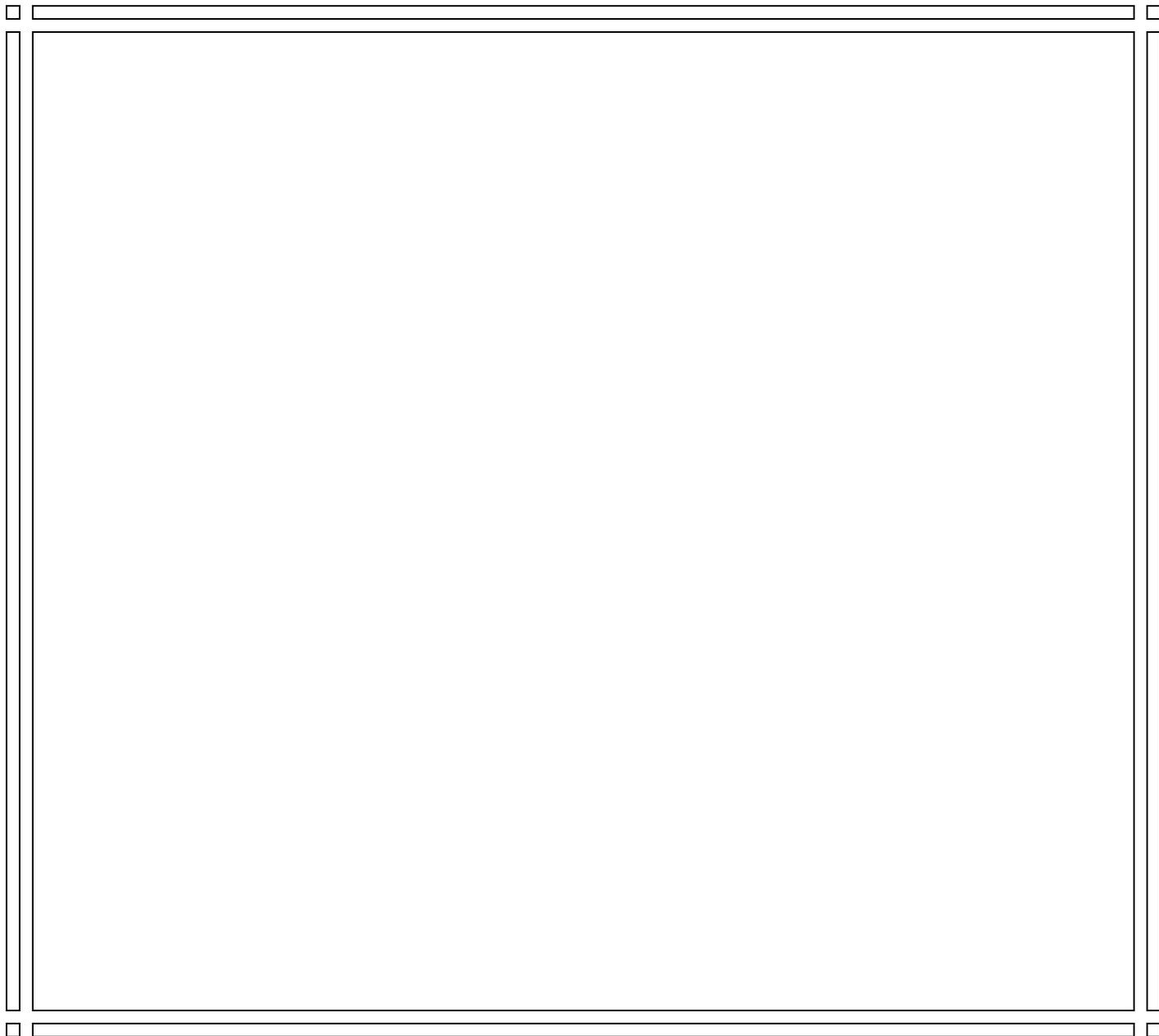Why *else?*

**What's stopping** me solving this problem?
What *else?*
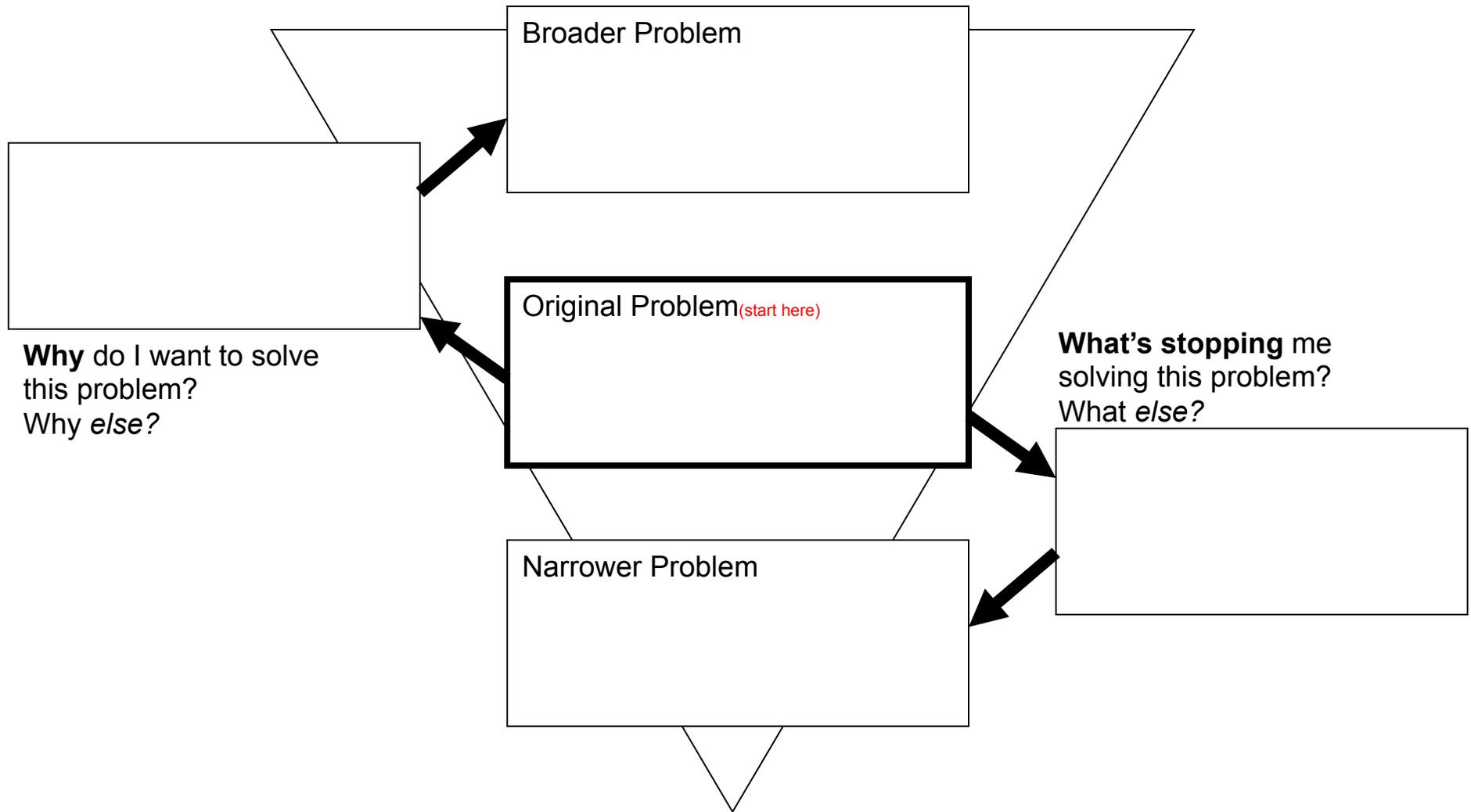
Narrower Problem

(NB: procedure may be repeated to broaden or narrow the problem to more levels)
The aim of this sheet is to get you to think about what your problem is, and at which level you are going to try and solve it

# What Is The Current System? (based on the level of problem you decided from the previous sheet)
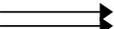
TYPES OF INTERACTION

Effective ——————

Missing ------------

Insufficient ---------▶

Excessive =======▶

Harmful ◀∿∿∿▶

(Plot the current components in the system, then identify the positive functional relationships between the components, then identify the negative relationships)

# How does TIME affect the system? (If there is a time either in the past or in the future (or both) where the functionality of the system is different, record those differences here)
(The 'past' or the 'future' may mean less than a second or it might mean more than a decade)

Past (meaning?)

Future (meaning?)

# Perception Mapping? (for situations where sparse, missing, fuzzy or opinion-based data is hindering meaningful understanding)
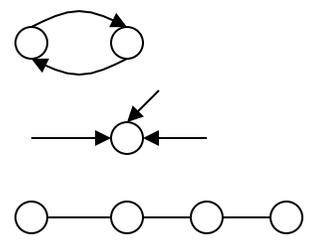
Question you are trying to answer:

| | Perceived Answer | Leads To? | Conflicts ? |
|---|---|---|---|
| A | | | |
| B | | | |
| C | | | |
| D | | | |
| E | | | |
| F | | | |
| G | | | |
| H | | | |
| I | | | |
| J | | | |
| K | | | |
| L | | | |
| M | | | |
| N | | | |
| O | | | |
| P | | | |
| Q | | | |
| R | | | |
| S | | | |
| T | | | |
| U | | | |
| V | | | |
| W | | | |
| X | | | |

(Suggested minimum number of perceptions: 10)

Perception Map

Look for:    - Loops

- Collector Points

- Conflict Connector Chains

**Resources** - Technical (Function, Substance, Field) (Pay particular attention to the things that are not being used to their maximum effect, and negative things)

|  | Past | Present | Future |
|---|---|---|---|
| Around the system |  |  |  |
| System |  |  |  |
| Within the system |  |  |  |

**Resources -** Knowledge

|  | Past | Present | Future |
|---|---|---|---|
| Around the system (SPONSOR) | | | |
| System (including CUSTOMER) | | | |
| Within the system (TEAM) | | | |

**Constraints -** Technical (Function, Specification, Process, Tools)

|  | Past | Present | Future |
|---|---|---|---|
| Around the system |  |  |  |
| System |  |  |  |
| Within the system |  |  |  |

**Constraints** - Business (Time, Cost, Risk, Skills)

|  | Past | Present | Future |
|---|---|---|---|
| **Around the system (SPONSOR)** |  |  |  |
| **System (including CUSTOMER)** |  |  |  |
| **Within the system (TEAM)** |  |  |  |

# Sore Point

What are we trying to improve?

What are the things that are stopping us?

Physical parameters — weight, linear dimensions, areas, volumes, shape

Performance parameters — speed, forces/loads, stresses, pressures, strength, use of energy, stability, duration of action, temperature, brightness, use of energy, power,

Efficiency Parameters — waste of energy, waste of substance, loss of information, waste of time, amount of substance

Manufacture Parameters — accuracy of measurement, accuracy of manufacture, manufacturability, device complexity, productivity, level of automation

'Ility Parameters — reliability, convenience of use, repairability, adaptability, harmful effects, control complexity

# Sore Point

What are you trying to improve?    What gets worse/What's stopping you?

```
┌─────────────┐                    ┌─────────────┐
│             │                    │             │
└─────────────┘                    └─────────────┘
       │                                  │
       ▼                                  ▼
┌─────────────┐  What              ┌─────────────┐
│             │  Aspect?           │             │
└─────────────┘                    └─────────────┘

┌─────────────┐  What              ┌─────────────┐
│             │  Aspect?           │             │
└─────────────┘                    └─────────────┘

┌─────────────┐  What              ┌─────────────┐
│             │  Aspect?           │             │
└─────────────┘                    └─────────────┘
                       │
                       ▼ etc
```

**Sore Point** - Where/When are the potential or known bottlenecks and contradictions?

| | Past | Present | Future |
|---|---|---|---|
| Around the system | | | |
| System | | | |
| Within the system | | | |

(It may be that the sore point exists in only one of these boxes)

# IDEAL FINAL ATTRIBUTES  (Use this template if you wish to make a comprehensive search for conflicts and contradictions in a system)

**ATTRIBUTE CONFLICTS**

| ATTRIBUTE | CUSTOMER A IFR | CUSTOMER B IFR | PROVIDER IFR | etc ⟶ |
|---|---|---|---|---|
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
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|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Key questions when looking for conflicts: 'Is there anyone who does not want this IFR?' Why?
'Is there a new attribute we should be thinking about?'

# IDEALITY
(You should only use this sheet if your constraints allow you the freedom to think of clean-sheet of paper solutions to your problem)

What function are you trying to achieve?

What is the Ideal Final Result (IFR)?
(Achieving the function without any cost or harm.
Think about the system solving the problem by itSELF)

What's stopping you from achieving the IFR?

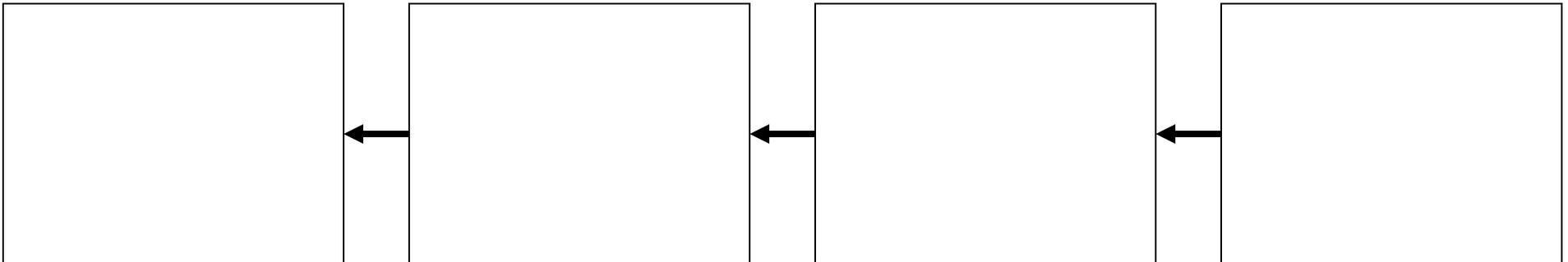Why is it stopping you?

How could you make it go away?

How might you work back from the IFR to a practical solution? ⟶

IFR (start here)

⟵ ⟵ ⟵

(As you work back from the IFR solution, apply minimum compromise at each stage, and concentrate on conceptual solutions rather than specific ideas. The further back from the IFR you go, the more possible concepts there may be.)

# How Mature Is The Current System?