
Tools

Interrelationship Digraph

Identifying Cause and Effect Relationships

Background

The interrelationship digraph is a tool that enables a group to systematically identify, classify, and analyze the cause and effect relationship among critical issues. Key drivers and outcomes are determined that can help drive an improvement initiative.

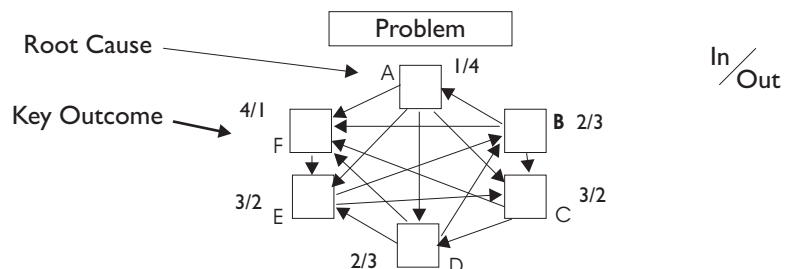
When to Use

- When multi-dimensional thinking is needed
- When it is critical to explore the interrelationships among all issues
- When group ownership is essential for an effort
- When the source of disagreement needs to be understood
- When root causes are important even though data are unavailable

How to Use

1. Agree on the problem statement.
2. Identify all of the issues. Note: Use affinity diagram to identify and categorize issues.
3. Number the ideas.
4. Choose any issue as a starting point. Work through them in sequence.
5. Look for cause/influence relationships between all of the issues. Ask “Is there a cause/influence relationship?” If yes, ask “Which direction of cause/influence is stronger?” Draw a one-way relationship arrow from the stronger cause to the effect. The arrow head goes toward the effect. **Do not use two-headed arrows.**
6. Tally the number of outgoing arrows and the number of incoming arrows. Write the number of outgoing arrows and the number of incoming arrows for each issue.
7. A high number of outgoing arrows identifies a root cause. A high number of incoming arrows identifies a key effect (outcome).
8. Focus planning efforts on the issue with the highest number of incoming arrows.

How Does It Look



Next Steps

Consider using the identified key outcome as a measure of overall success or as a source for redefinition of the original issue.

