

Force & Effect Diagram Guides Team through Addressing Barriers

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Teams are effective for problem solving and decision making. Members of a team often view opportunities or problem solutions differently. This is a normal team characteristic. The Force & Effect (F&E) Diagram is designed to identify barriers to agreement among team members concerning a specific situation. The F&E Diagram is shown in figure 1.

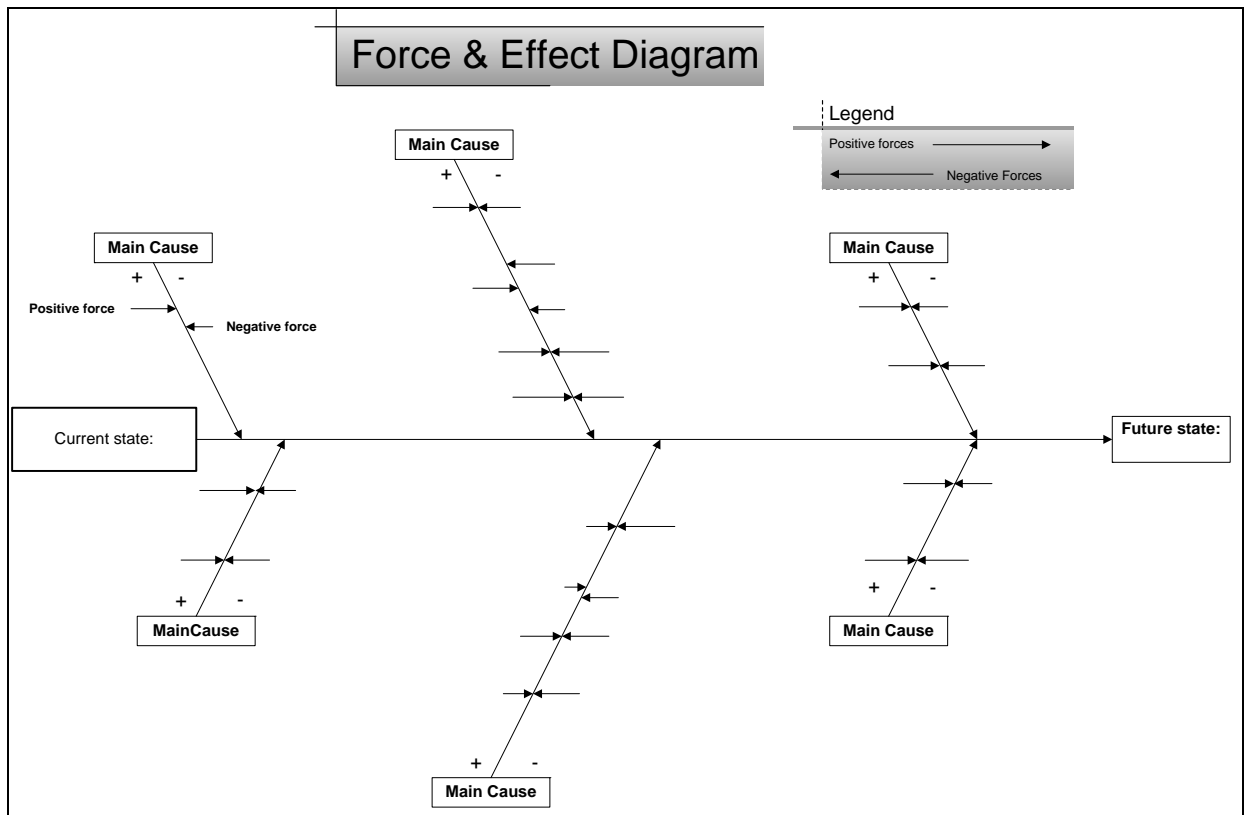


Figure 1: Force & Effect Basic Diagram

The F&E Diagram combines a Force Field and Cause & Effect Diagram. Instead of having one box on the cause and effect diagram we use a double headed effect. The first effect (far left) is the current state and the second effect (far right) is the desired future state. In between are branches of main causes that maintain the status quo. Too often we focus only on the causes of the current state without looking at what pushes us to change. The current state is held in balance by the interaction of opposing forces; those seeking to promote change (driving) and those attempting to maintain the status quo (restraining).

The F&E Diagram presents positives and negatives of a current state so they are easily comparable, considers all aspects of making the desired change, encourages team agreement about the relative priority of the positive and negative factors and encourages reflection on the underlying roots of a problem and its solution.

Figure 2 is a F&E Diagram for making data driven decisions. The F&E Diagram combines with brainstorming and affinity analysis to develop and organize main causes.

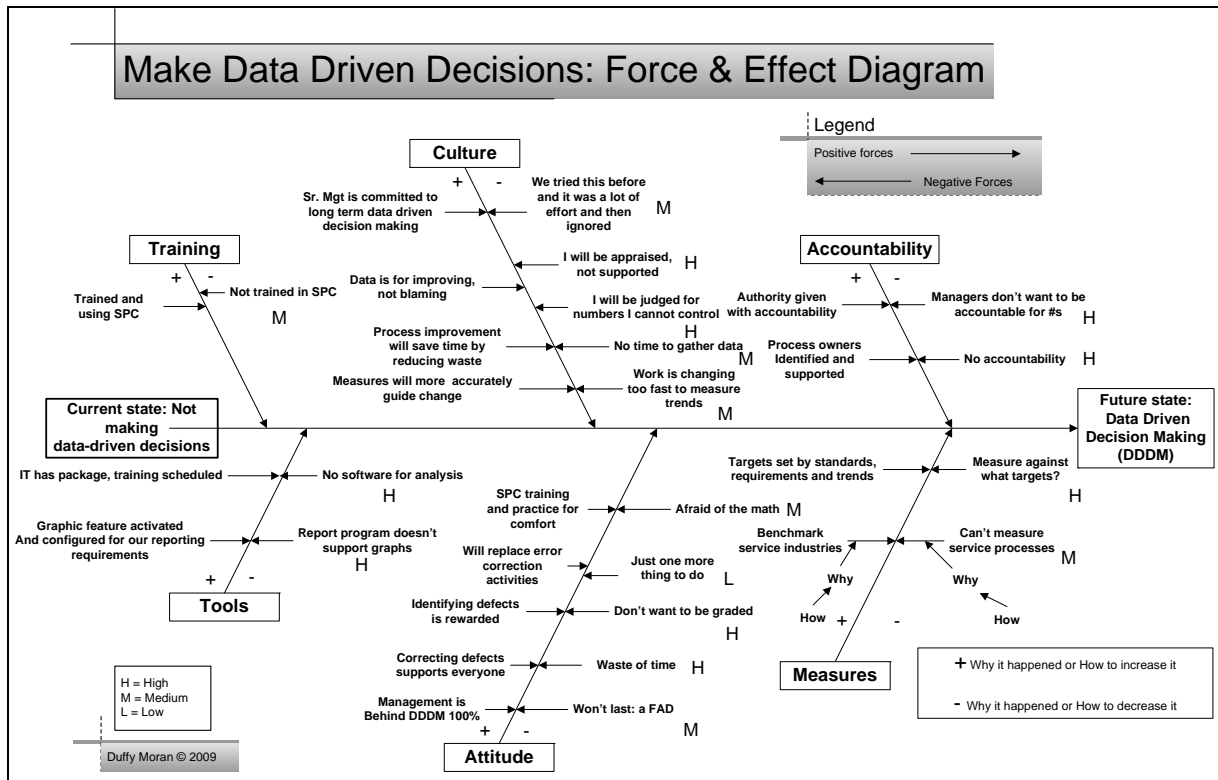


Figure 2: Force & Effect Diagram: Data Driven Decision Making

To get to the desired future state we must diminish the restraining forces and increase the driving forces. We construct an F&E Diagram as follows:

1. Draw the F&E Diagram
2. Write the current state in the box on the far left
3. Write the desired future state in the box on the far right

4. Brainstorm major cause categories and place them in the diagram as main cause branches
5. For each main cause branch list the restrainers (right side) and drivers (left side)
6. Determine the strength of each force as High (H), Medium (M), or Low (L)
7. Determine how to:
 1. Increase the strength of driving forces by asking “Why” it happened and “How” to increase its positive effect
 2. Decrease the strength of restraining forces by asking “Why” it happened and “How” to decrease its negative effect
9. Once all the major forces, both positive and negative have been analyzed, the team develops an action plan to move to the desired state.

It is not necessary to have a positive force related to each negative force. Multiple forces on one side of a main cause can address a single force on the opposite side. The F&E Diagram is a tool to encourage team discovery and prioritization related to root cause solutions.

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