## Murphy Matrix (Prevention & Recovery Planning)

> *Whatever can go wrong, will. – Murphy's Law.*

What is it?

A method that allows you to:

- Identify possible problems that may occur;

- Prioritize these based upon expected frequency or probability of occurrence, and their impact or significance;

- Develop *Preventive* actions to minimize the likelihood of occurrence;

- Develop recovery plans to *Prepare* for and react to the most significant problems when they do occur.

Possibilities

⬇

Priorities

⬇

Prevent

⬇

Prepare
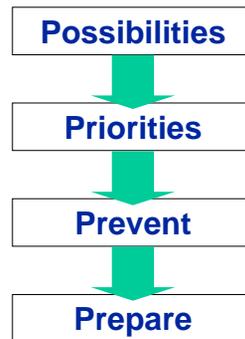
This method is commonly used to:

- Enhance and refine existing project or implementation plans,

- Identify potential problems in a desired future state process map and develop preventive and/or contingency plans for dealing with these problems.

How do I use it?

❶ Name the goal, plan or process for which you will complete the matrix. In every case, you will be completing the matrix in order "To assure successful" …

Examples include:

> GOAL: To assure successful…
>
> …completion of the XYZ project.
>
> …implementation of the XYZ system.
>
> …operation of the XYZ process.

❷ Clarify meeting roles and allow 30-45 minutes.

❸ Brainstorm a list of Possibilities, i.e., "What could go wrong?"

> POINTER: To identify possibilities, use Brainstorming or other idea generation methods from Chapter 4: *Making Ideas*.

Consider the following:

♦ Possible mistakes, errors, or failure modes.

♦ Unexpected or non-standard customer requests.

♦ Short- and long-term consequences associated with the proposed solution or project.

♦ Unintended "ripple" effects on other areas.

❹ Evaluate the possibilities identified in Step ❸ and rate each in terms of its expected **Frequency of occurrence** using the following scale.

Expected **Frequency** of occurrence
0 = Never
1 = Seldom
2 = Occasionally
3 = Often
4 = Frequently
5 = Always

HINT: If appropriate, you can evaluate in terms of Likelihood rather than Frequency.

Use the following scale to rate each of the possibilities in terms of its **Impact**, or significance if it does occur.

Impact when it occurs on the ability to deliver outputs or meet key requirements
0 = None
1 = Small
2 = Moderate
3 = Large
4 = Very large
5 = Enormous

HINT: Don't spend too much time debating the ratings. You are just using the rating scales to grossly evaluate the relative Frequency and Impact of the possibilities. Don't overwork this section of the method.

To establish priorities, multiply Impact ratings x 2 and sum as follows:

Frequency + (Impact x 2) = Priority

HINT: To ensure you focus on those problems with the greatest Impact, the rating for this dimension is multiplied by two to give it extra weight.

Following is a partially completed example of Steps ❸ and ❹ for the following goal:

> *Assure successful completion of all my homework assignments.*

❸ POSSIBILITIES *What could go wrong?*	❹ F + (Ix2) = Priority				
	Frequency	+	Impact (x2)	=	P
The dog eats my assignment.	1	+	3 (x2)	=	7
I get home too late to do it.	5	+	4 (x2)	=	13
I forget my books at school.	4	+	4 (x2)	=	12
I don't know how to do it.	3	+	3 (x2)	=	9

Identify the top 2-3 priority areas to address and continue with those in the next steps. In the example above, that would be:

♦ I get home too late to do it.

♦ I forget my books at school.

❺ For the each of the priority possibilities, brainstorm actions you could take to *Prevent* that problem, i.e., to make it occur less frequently.

These should be proactive steps, or actions you take <u>before</u> the problem happens, to minimize its expected frequency or likelihood of occurrence.

> "An ounce of prevention is worth a pound of cure."
> -- *Benjamin Franklin*

❻ For the each of the priority possibilities, brainstorm actions you could take to *Prepare* for and recover from the problem if it does occur, i.e., to minimize its Impact.

These should be reactive steps, or actions you take <u>after</u> the problem occurs, in order to minimize its Impact. These are often referred to as recovery or contingency plans, i.e., what to do if X occurs.

Following is an example of Steps ❺ and ❻ for one of the priority problems identified in the prior example:

"I forget my books at school."

❺ PREVENT it *To make it occur less <u>frequently</u>* (never is best)	❻ PREPARE for it *To minimize its <u>impact</u> if it does occur*
• Leave all books at home. Don't take them to school. • Buy an extra set of all textbooks and leave a copy of them at home. • Make an announcement at the end of school each day reminding students of their assignments and what books to bring home.	• Distribute a list with names and phone numbers of every student so they can call one another. • Post copies of all textbooks on the school's web site. • Have a set of textbooks available at the local public library.

❼ For each priority risk or potential problem, develop plans to implement the Prevention and Recovery strategies.

Problem or Risk	Actions to Prevent (Minimize Frequency)	Assigned (to Whom?)	Timing (complete by When?)	Status
Indicators of Occurrence	Actions to Recover (Minimize Impact)	Assigned (to Whom?)	Timing (complete by When?)	Status

NOTE: While the Murphy Matrix is most often used to anticipate and respond to *problems* that may occur, it can also be used to anticipate *opportunities* that may present themselves.

If used to anticipate, in Step ❸ brainstorm answers to "What could go right?" to identify possible opportunities. Rate them in Step ❹ using the same 0-5 scale, but instead of frequency, evaluate expected probability of occurrence. In Step ❺ identify ways to make it more likely the opportunities will occur.

In Step ❻ identify ways to capitalize on them should they occur.

MURPHY MATRIX (Prevention & Recovery Planning)

❷ Roles

❶ GOAL: Assure successful _____   Scribe: _____   Facilitator: _____

Date: _____   Participants: _____   Timekeeper: _____

❸ POSSIBILITIES _What could go wrong?_	❹ F + Ix2 = Priority				❺ PREVENT it _To make it occur less frequently (never is best)_	❻ PREPARE for it _To minimize the impact when it does occur_
	Frequency	+	_Impact x 2_	=	_P_	
		+	x2	=			
		+	x2	=			
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FREQUENCY: _0 = Never; 1 = Seldom; 2 = Occasionally; 3 = Often; 4 = Frequently; 5 = Always_   **IMPACT**: _0 = None; 1 = Small; 2 = Moderate; 3 = Large; 4 = Very large; 5 = Enormous_