

CAUSE MAPPING[®]

Problem Solving • Incident Investigation • Root Cause Analysis • Risk Mitigation

Example - Case Study

A Root Cause Analysis of the Titanic - Simple to Detailed

Investigating and preventing complex problems in your business.

How a Simple 5-Whys can Turn Into a Complete and Thorough Analysis



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Root Cause Analysis - Cause Mapping Method

- Step 1.** Define the Problem
- Step 2.** Conduct a Cause-and-Effect Analysis (visual, simple to detailed)
- Step 3.** Identify Solution Options to Mitigate Risk (select the best ones)

Root Cause Analysis - Cause Mapping Method

Step 1. Define the Problem

What	Problem(s)	Titanic sank, ship hit iceberg, people died, weak rivets
When	Date, time	April 14th, 1912, ~11:40 pm
	Different, unusual	Maiden voyage, five ice warnings, nighttime
Where	Geographic location	North Atlantic
	Company	White Star Line
	Equipment, unit, area	RMS Titanic, starboard bow
	Task (work process)	Transporting passengers from UK to US

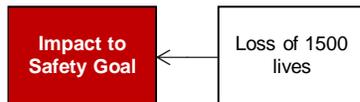
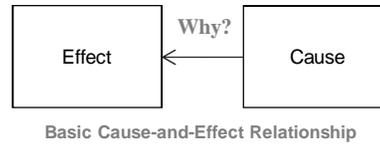
Impact to the Overall Goals

Safety	1500 Fatalities (705 survivors)	
Customer Service	Major ?	
Operations, Schedule	Major ?	
Property, Equip.	Lost entire ship	\$ 7,500,000
Frequency	1x	

Step 2. Analysis

Titanic Sank

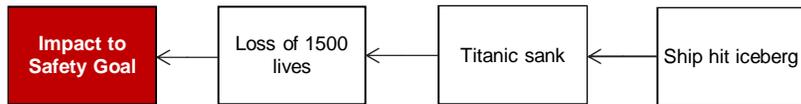
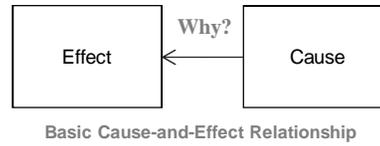
Cause Map



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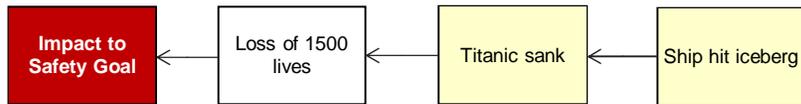
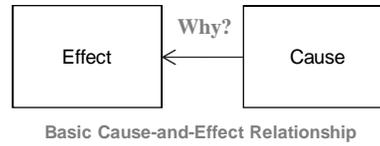
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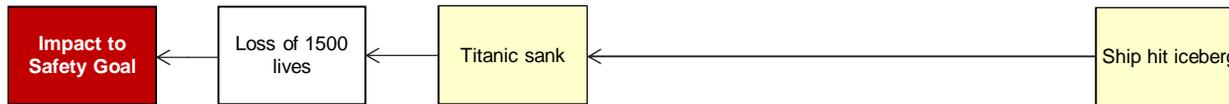
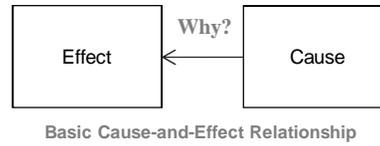
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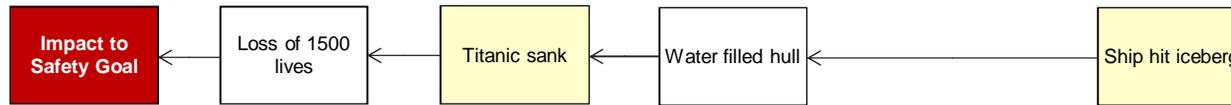
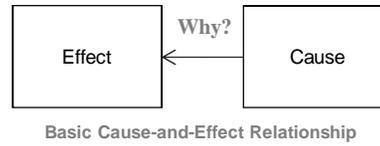
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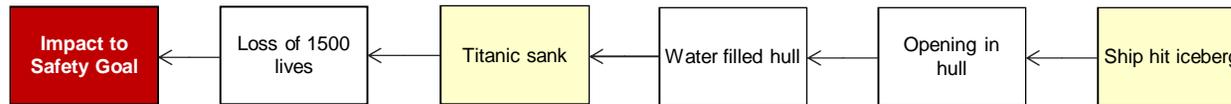
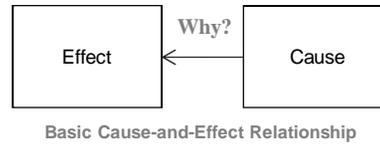
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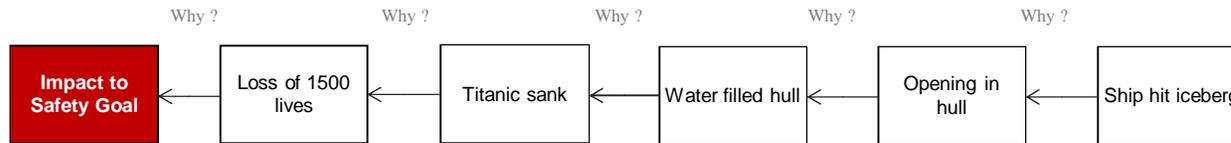
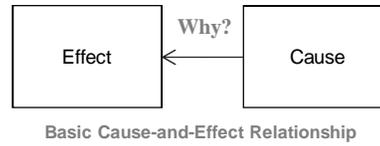


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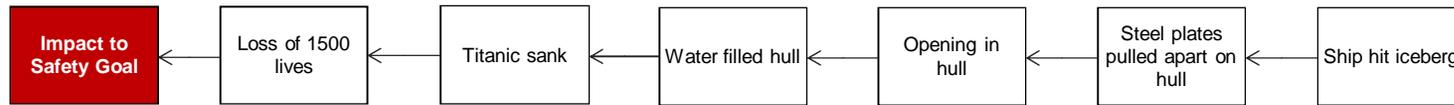
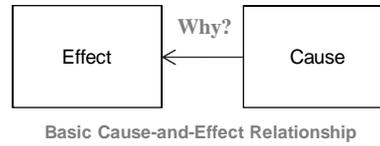
5-Whys is simply a Cause Map with 5-Why questions, but there are more....



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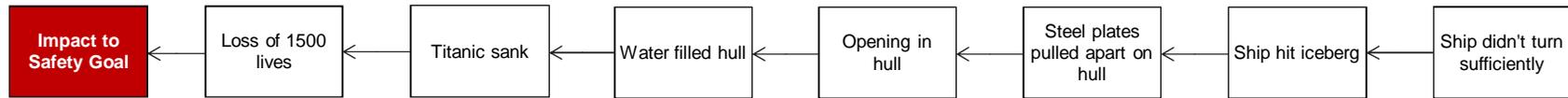
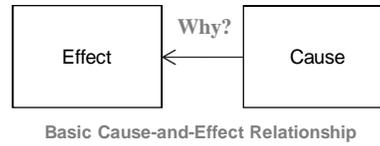
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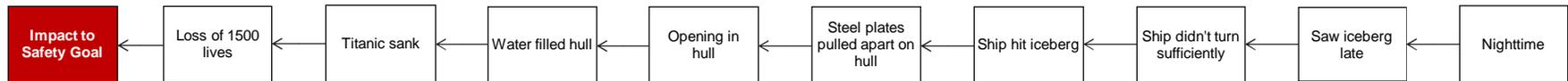
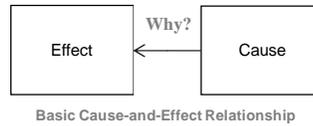
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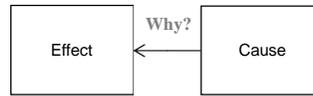
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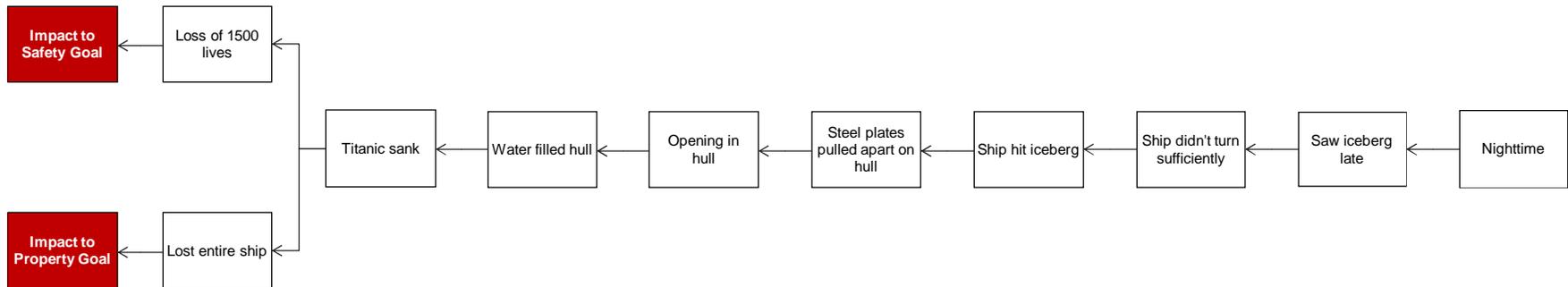
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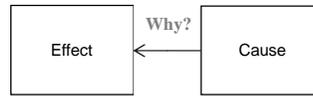


Basic Cause-and-Effect Relationship



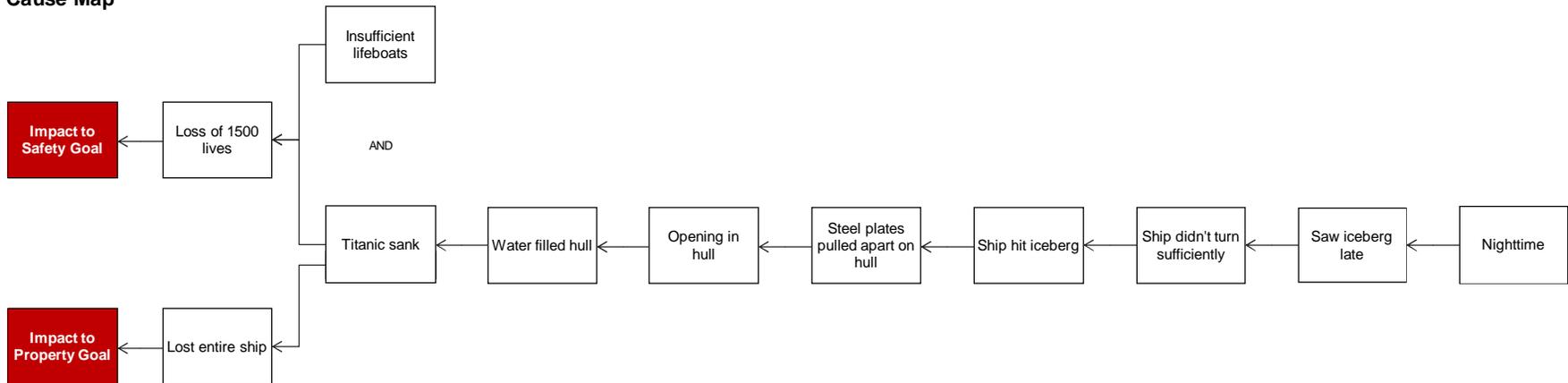
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Basic Cause-and-Effect Relationship

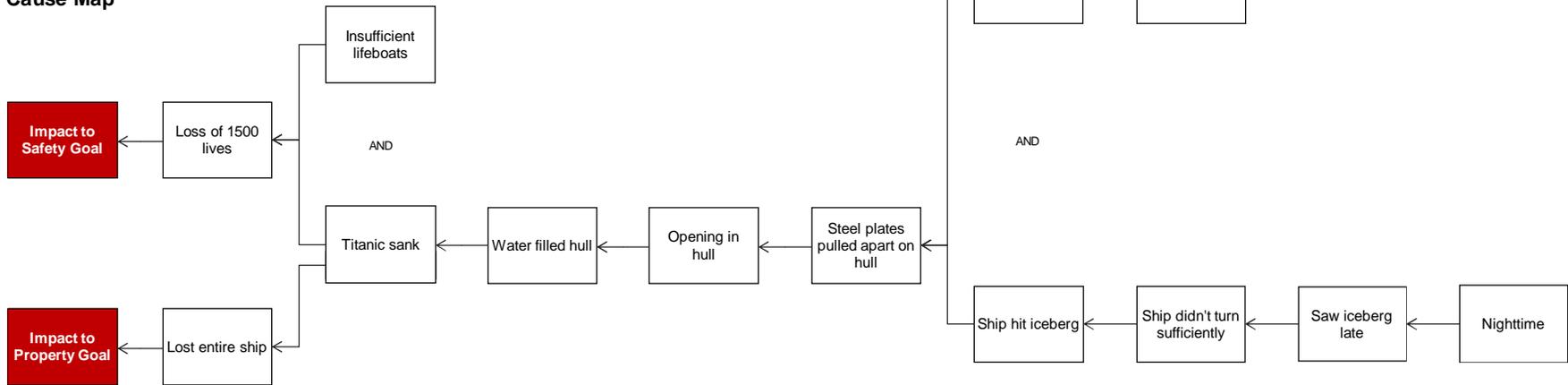
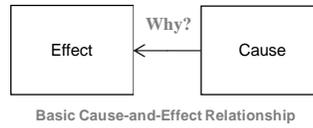
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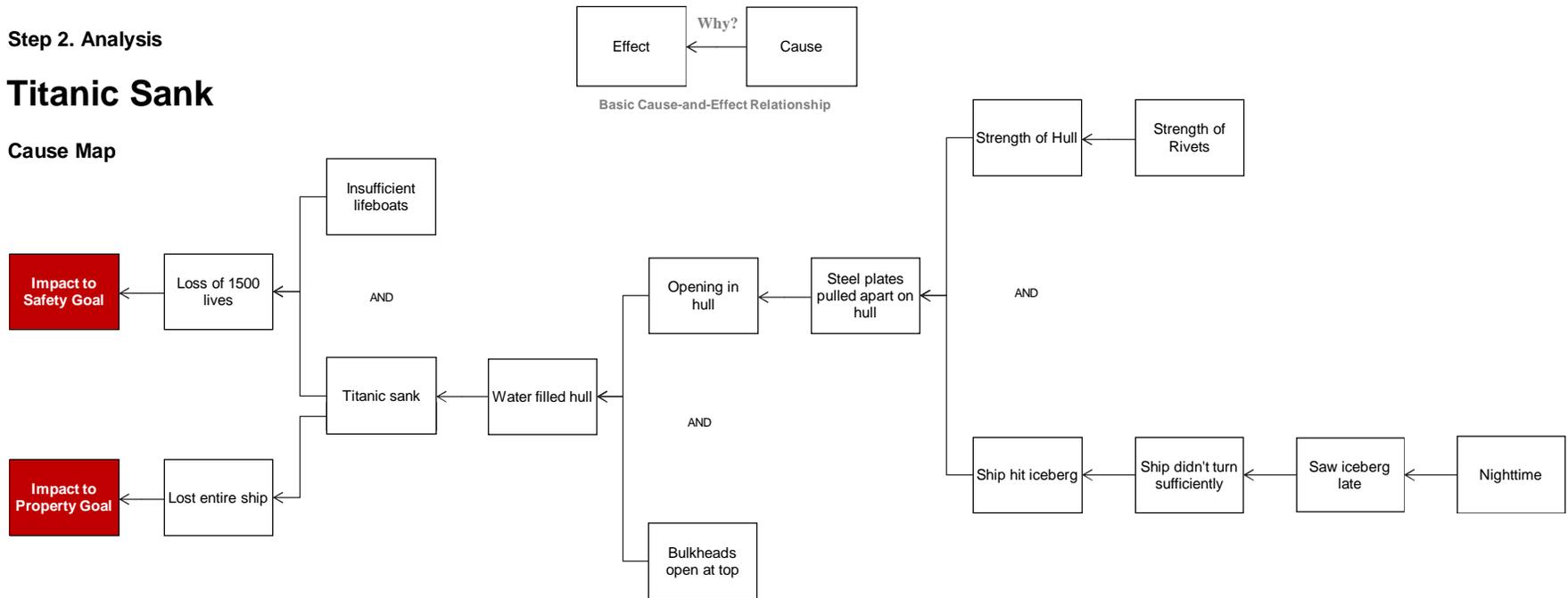
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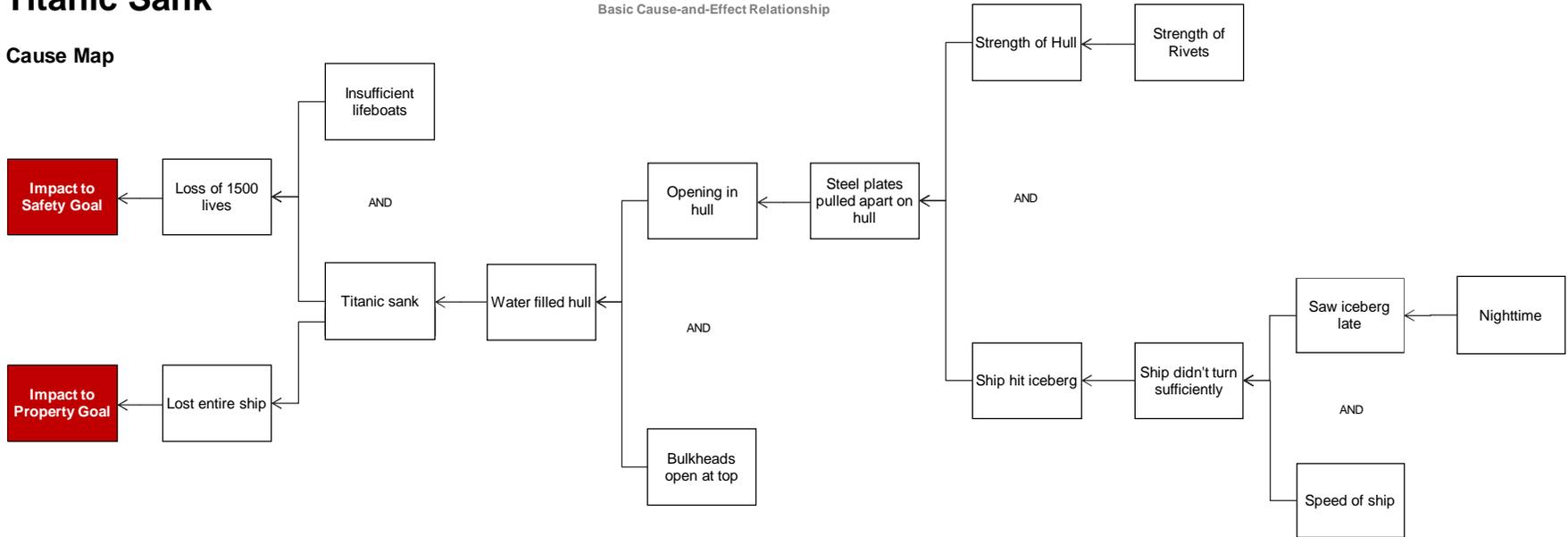
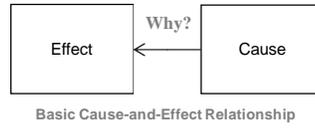
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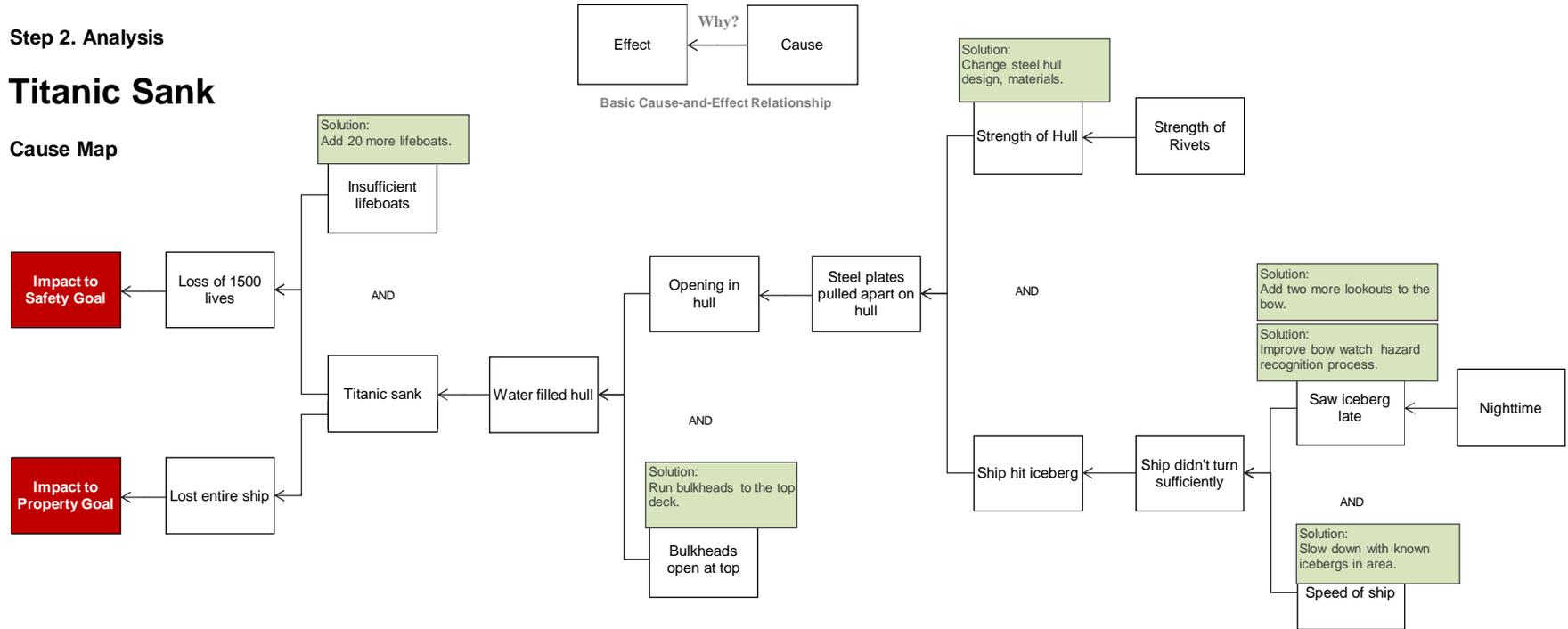
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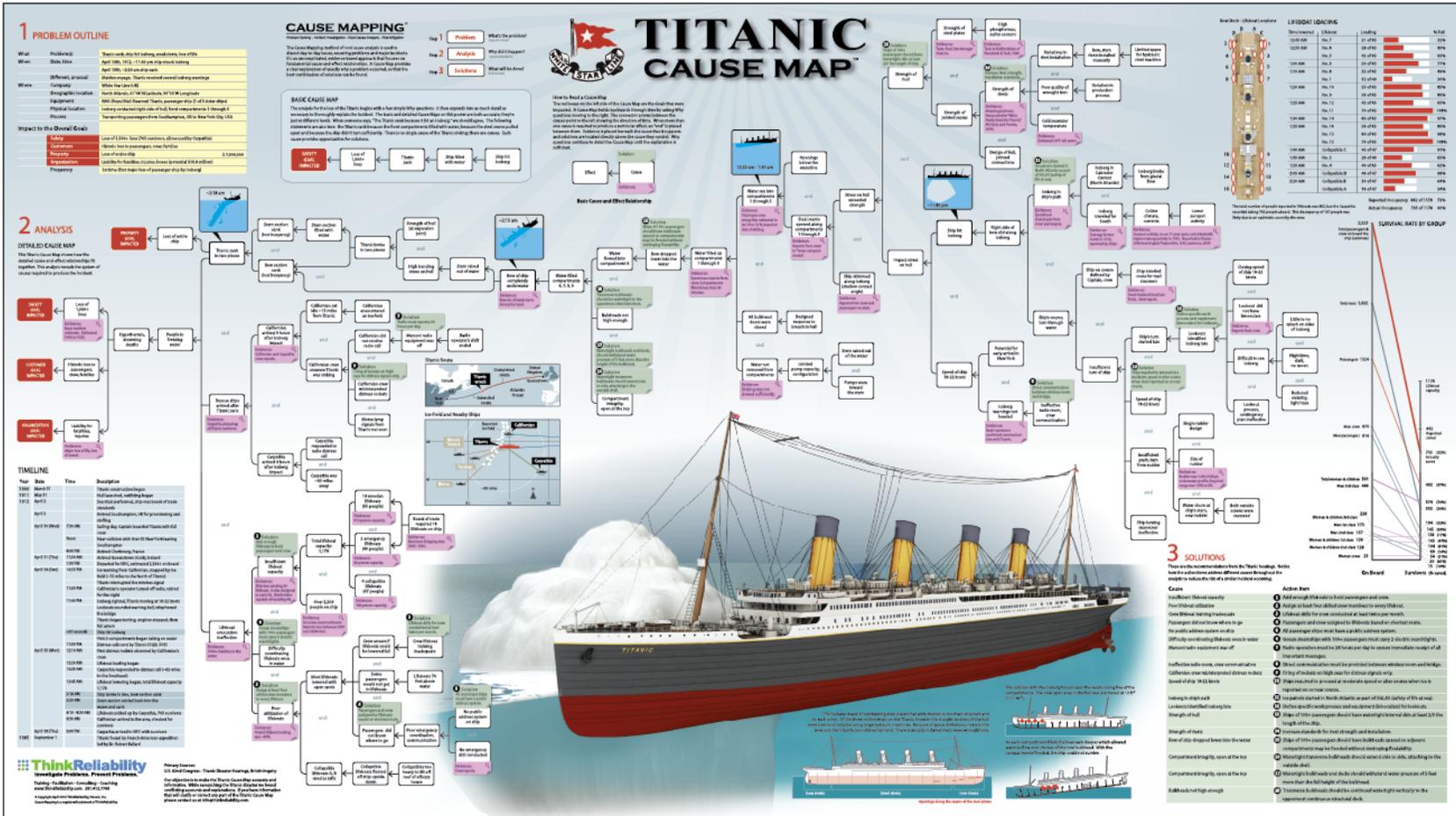


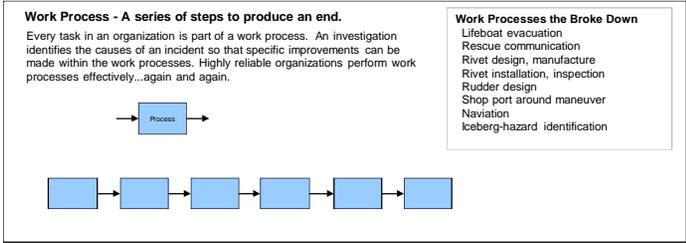
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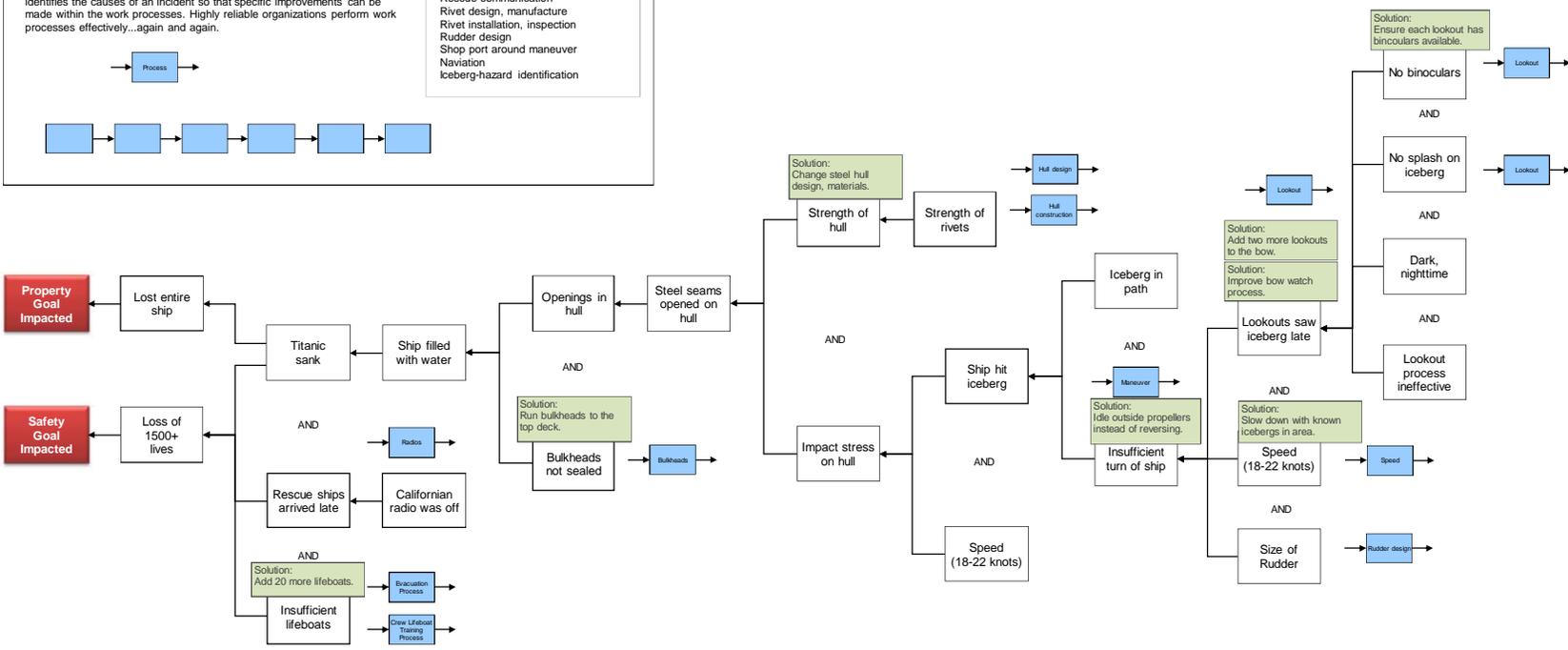
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Titanic Cause Map with "Broken" Work Processes Identified



- NOTES**
- A Cause Map shows the causes that produced a particular incident (**the Analysis**).
 - Each causal path reveals specific work processes that broke down (**Pinpoints Necessary Changes**)
 - Solutions are implemented as changes within those particular work processes (**Best Practices going Forward**).
 - Every cause and every work process does not need to be solved (**Lowest Acceptable Risk**).

