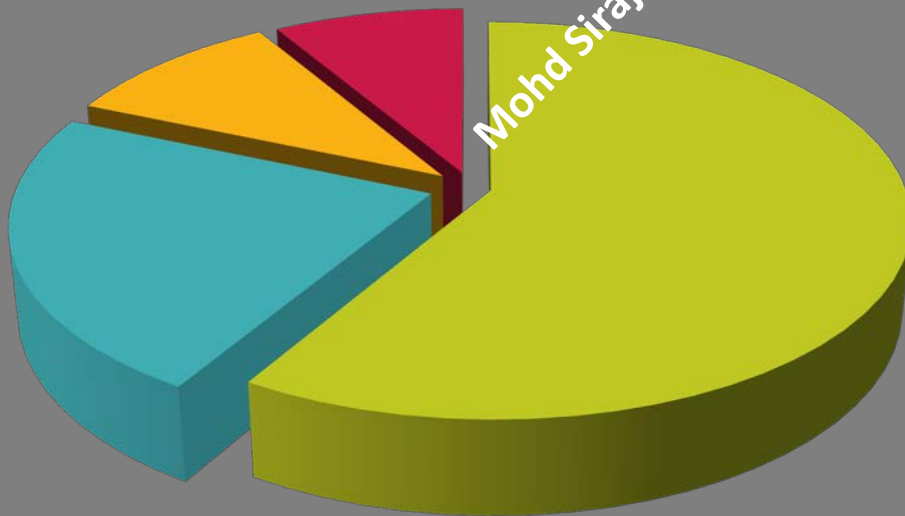


Risk Based Inspection

Enhancing Asset Integrity Management

- What is RBI?
- How Does RBI Works
- Benefits of RBI
- API 580/581



Risks

01

Risk = P.O.F X C.O.F

02

Qualitative risk analysis: Subject matter expertise and experience to assign broad categorizations for POF and COF

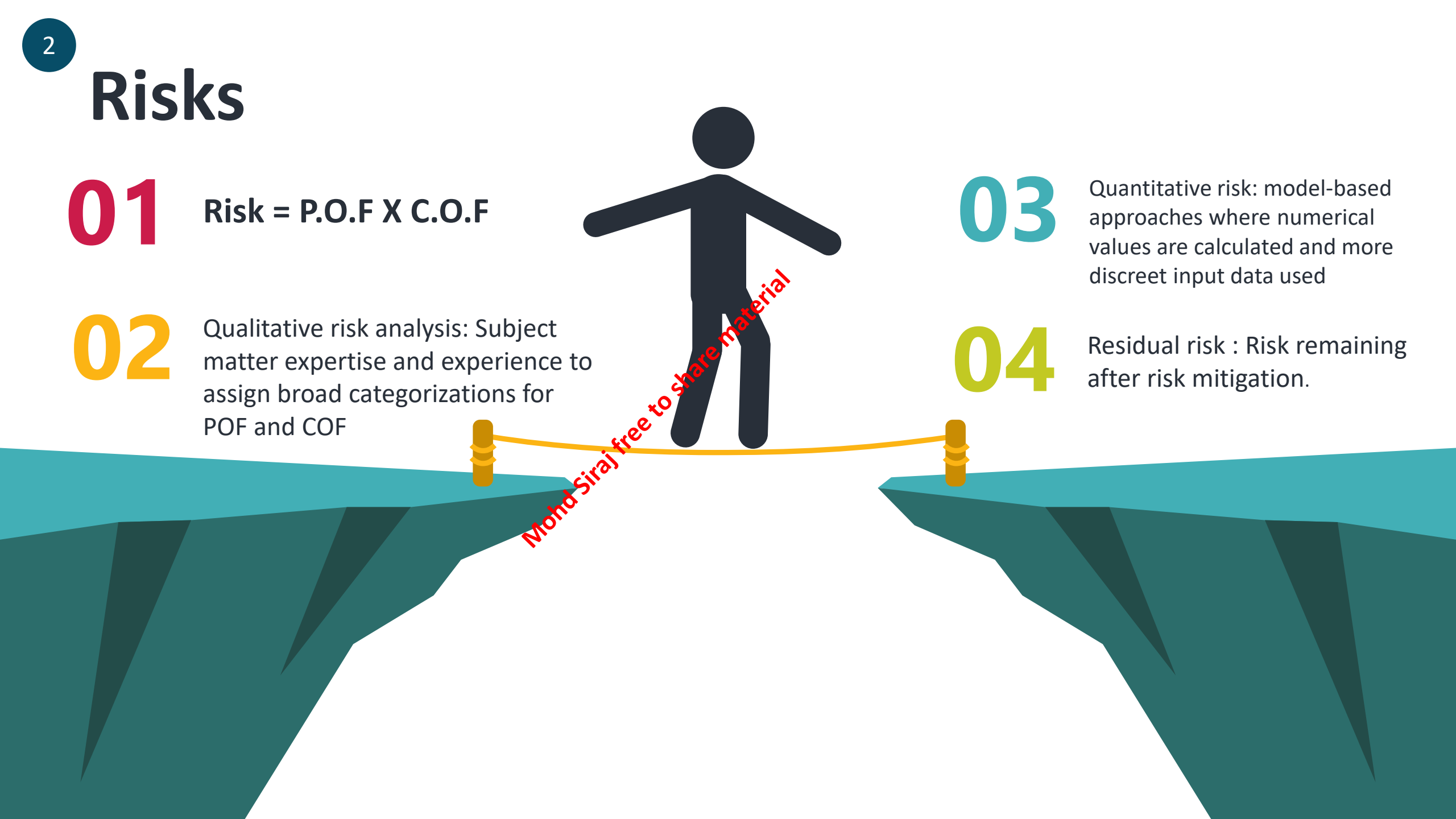
03

Quantitative risk: model-based approaches where numerical values are calculated and more discreet input data used

04

Residual risk : Risk remaining after risk mitigation.

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A stylized illustration of a person walking a tightrope over a chasm. The person is a dark blue silhouette with arms outstretched, balancing on a thin yellow rope. The rope is anchored to two yellow posts on the edges of two dark teal cliffs. The background is white. A red diagonal watermark text 'Mohd Siraj free to share material' is overlaid across the center of the image.

Risk Based Inspection (RBI)

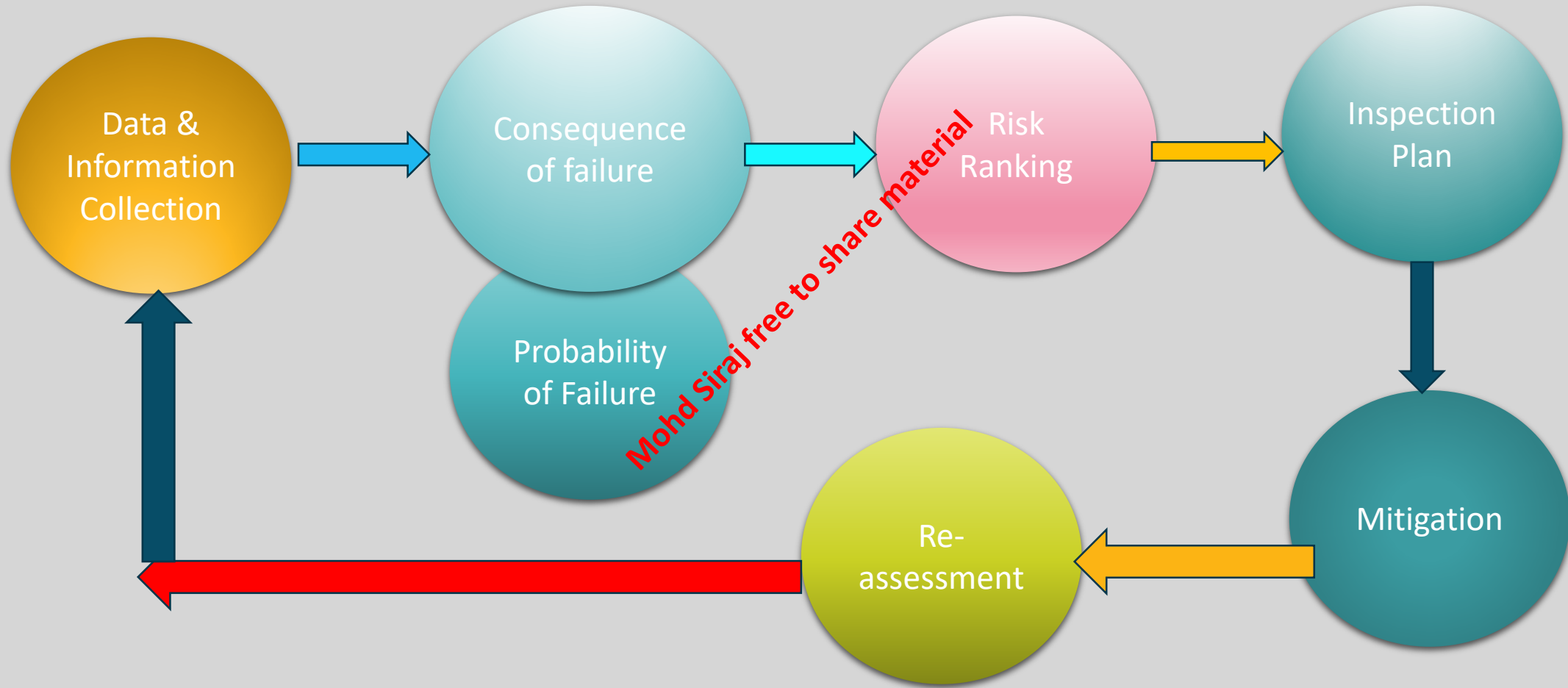
A risk assessment and management process that is focused on loss of containment of pressurized equipment in processing facilities, due to material deterioration.

These risks are managed primarily through equipment inspection.

Relative Risk is the comparative risk of a facility, process unit, system, equipment item, or component to other facilities, process units, systems, equipment items, or components, respectively.

RBI is focused on a systematic determination of **Relative risk**.

How does RBI work?



How does RBI work?

Step 1: Identify the assets to be inspected

Step 2: Assess the risks associated with each asset

Step 3: Develop an inspection plan based on the risk assessment

Step 4: Implement the inspection plan

Step 5: Monitor the inspection results and make adjustments to the plan as needed

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How does RBI work?

Step 1: Identify the assets to be inspected

This can be done by considering the following factors:

- The criticality of the asset
- The type of asset
- The age of the asset
- The operating environment of the asset
- The past inspection history of the asset

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How does RBI work?

Step 2: Assess the risks associated with each asset.

This can be done by considering the following factors:

- The likelihood of a failure occurring
- The consequences of a failure occurring
- The detectability of a failure

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How does RBI work?

Step 3: Develop an inspection plan based on the risk assessment

The inspection plan should specify the following:

- The type of inspection to be performed
- The frequency of inspections
- The extent of inspections
- The methods and procedures to be used for inspections

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How does RBI work?

Step 4: Implement the inspection plan.

The fourth step in RBI is to implement the inspection plan. This involves carrying out the inspections in accordance with the plan.

Step 5: Monitor the inspection results and make adjustments to the plan as needed.

The final step in RBI is to monitor the inspection results and make adjustments to the plan as needed. This involves reviewing the inspection results and determining if the plan needs to be updated.

Benefits of RBI

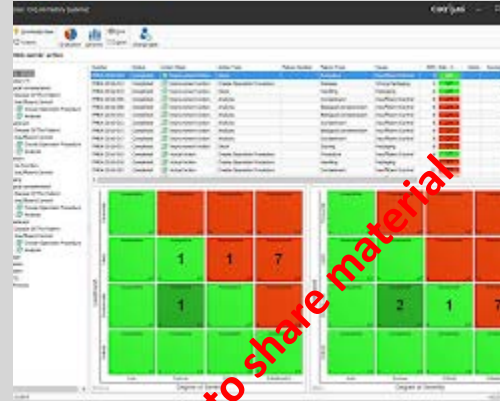
- Reduces the risk of asset failures
- Improves asset reliability
- Extends asset life
- Saves money on inspection and maintenance costs
- Improves compliance with regulations

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Software for RBI



**Asset Integrity Manager
(AIM)**



Risk NET by Intergraph



RISK 360 by Innothink