



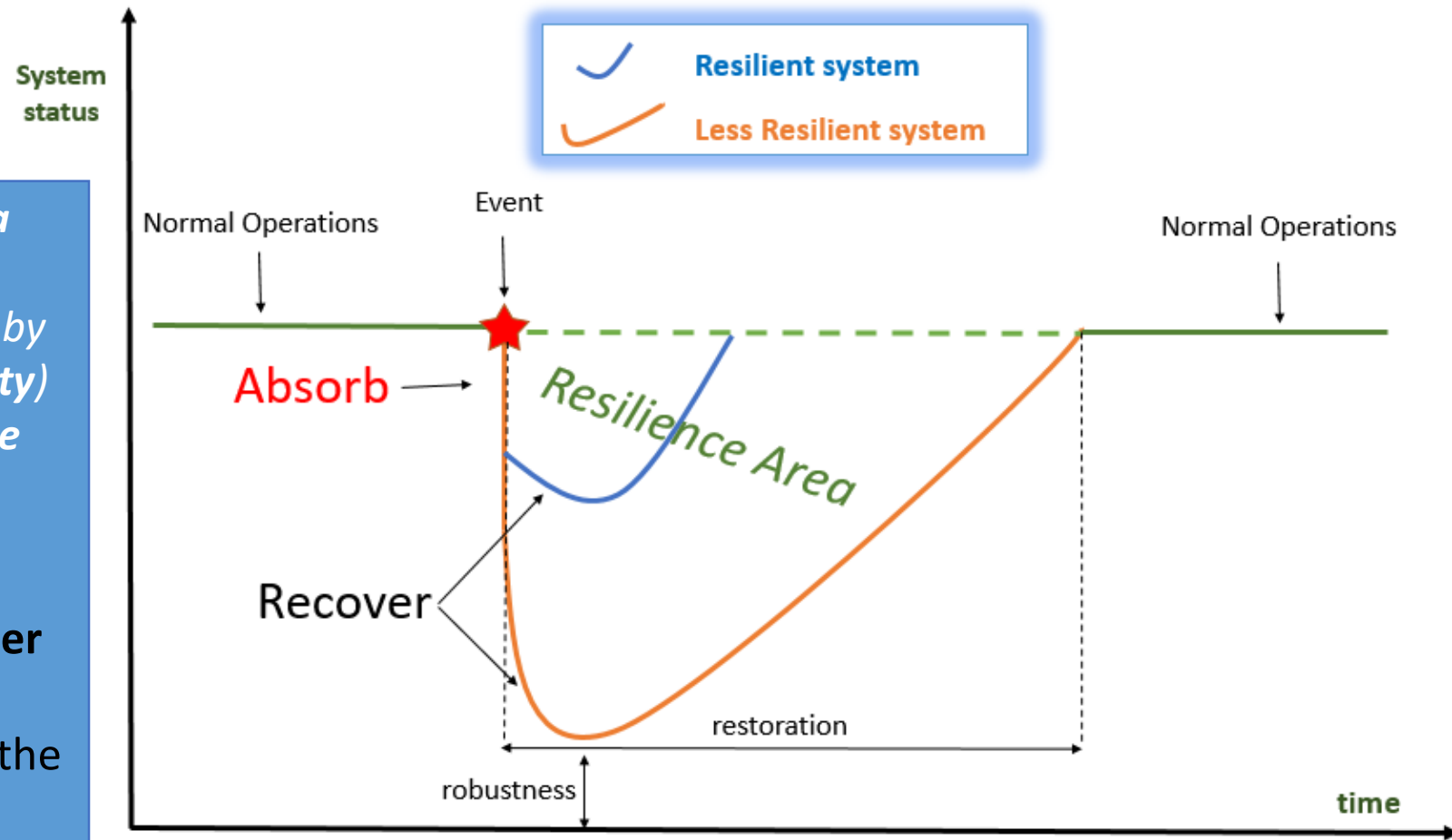
Supply Chain Resilience: Dealing with Risks and Uncertainties

What is Resilience



*The **ability of the system to withstand a disruptive event** by reducing the initial negative impacts (**absorptive capability**), by adapting itself to them (**adaptive capability**) and by recovering from them (**restorative capability**) [Fiksel, 2003]*

Resilience **allows organizations to better understand the performance and behaviors of a system during and after the occurrence of disturbances**



Enablers for resilience



Emphasizing the importance of healthy people and communities for a resilient city

An ecosystems approach

Financial, technical, and value engineering are all tools to help find cost effective solutions. And financial institutions are concerned about resilience in their work and their own assets

Namely using data and digital platforms to optimize resilience solutions

Resilience of what, to what, for whom

Resilience

Of WHAT

- 1) Buildings, Cities, Communities
- 2) Critical Infrastructure
- 3) Organizations

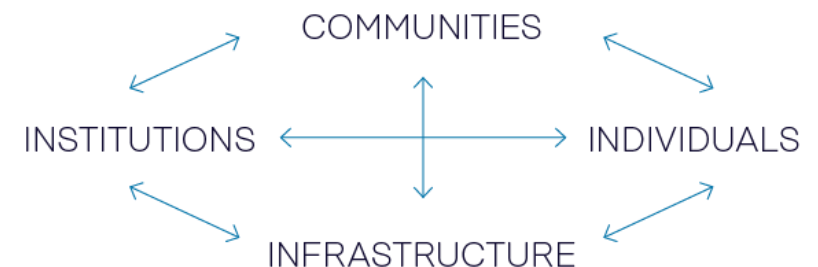
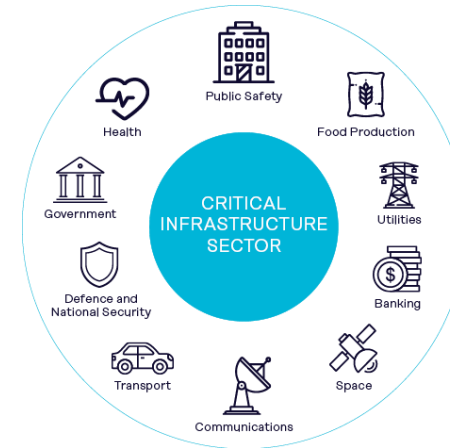
To WHAT

- 1) Natural Events
- 2) Man-Made Threats
- 3) Cyber Attacks

For WHOM

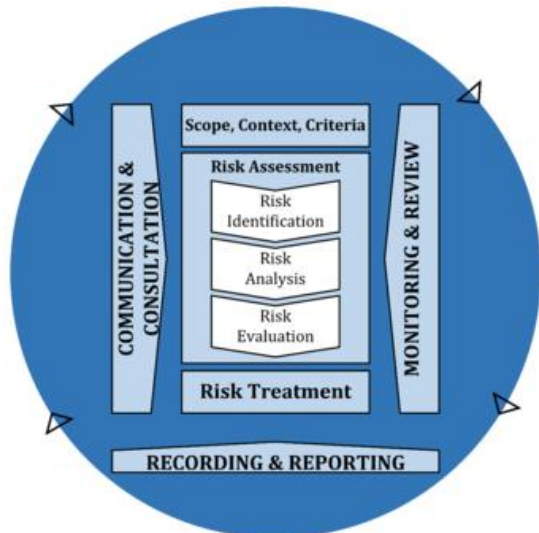
- 1) Planners and Policy Makers
- 2) Managers and Operators of Critical Infrastructure
- 3) Any organization

WHOLE ECOSYSTEM RESILIENCE



Resilience Engineering – The integration of:

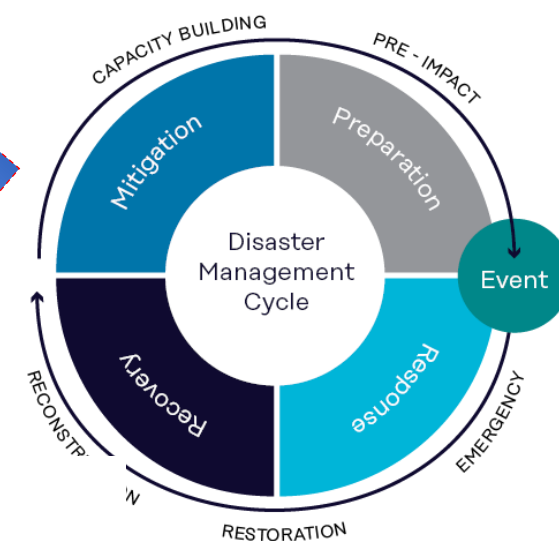
Risk Management



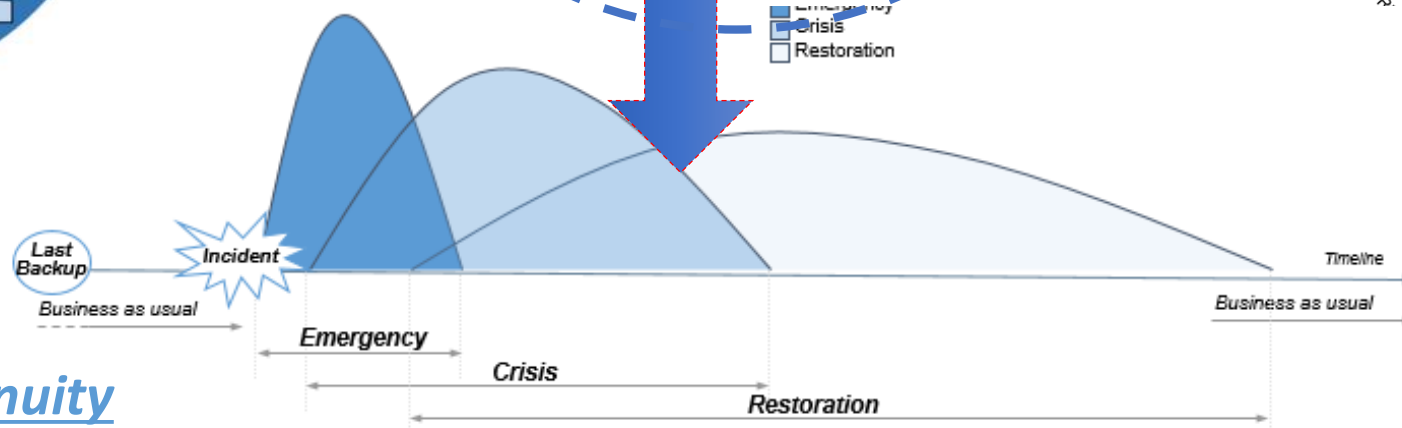
Resilience Management



Crisis Management



Business Continuity

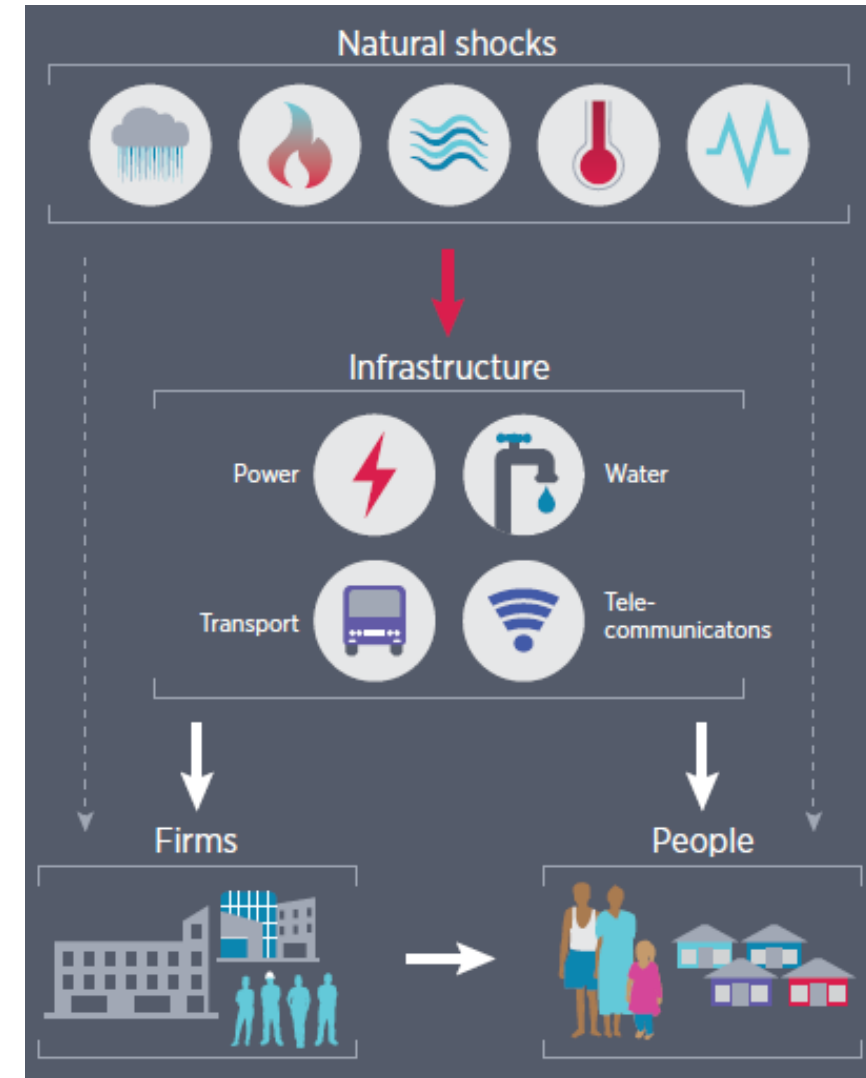


■ Emergency
■ Crisis
■ Restoration

Supply Chain: a complex connected ecosystem

In a Supply Chain assets, systems and infrastructures are heavily interconnected and interdependent

Providing “resilience” means not only to secure the specific system in scope but also to understand the potential cascading effects induced by the loss of functionalities of one system on the others, the consequences of this on the business and service operability and finally on the users, the citizens and the society



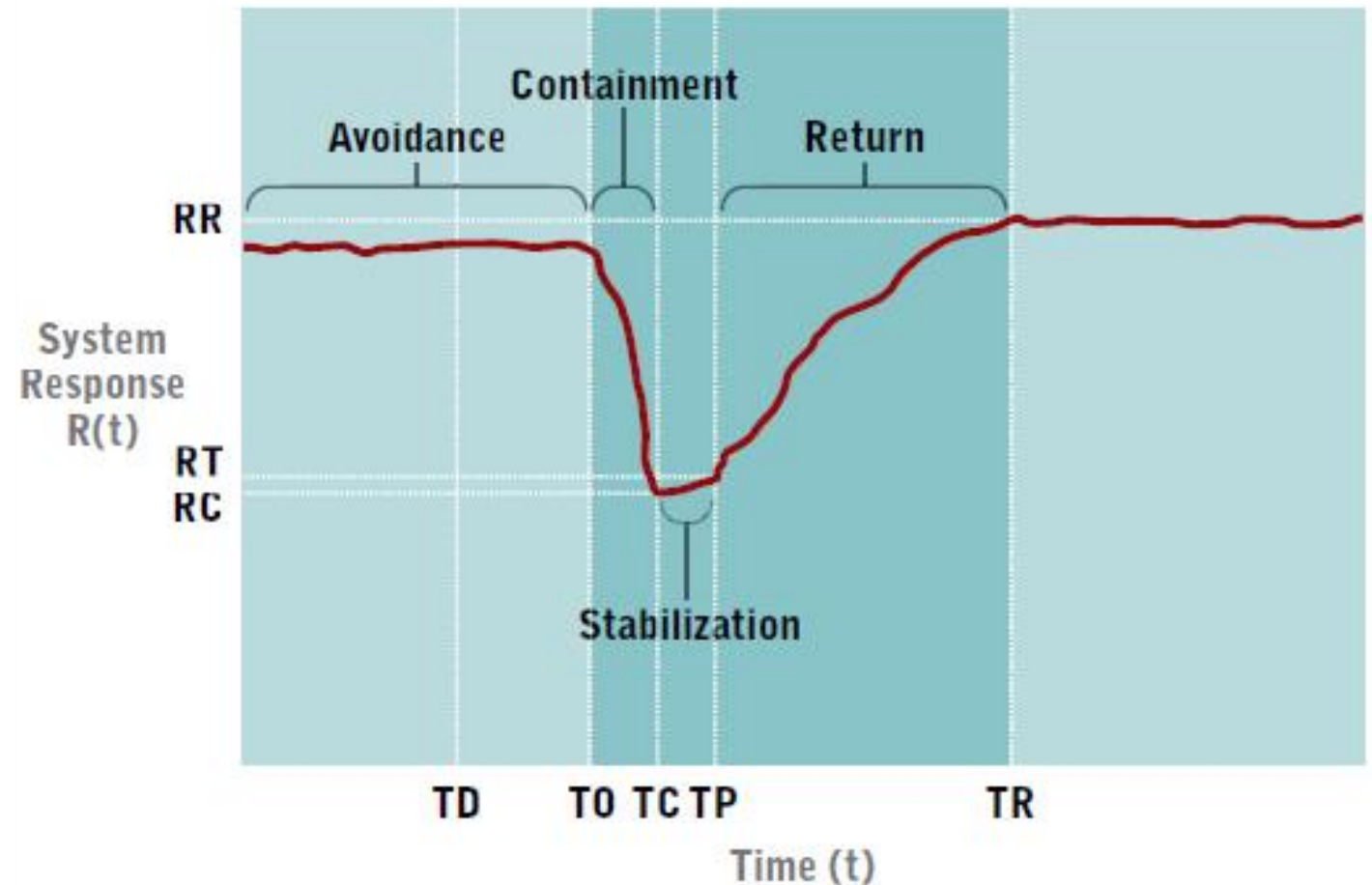
In a connected ecosystem one's resilience depends on the whole supply chain resilience



The resilience of a supply chain is
“the ability of a supply chain to
both resist disruptions and
recover operational capability
after disruptions occur.”

C.S. Holling, ecologist

Time Series Display of Supply Chain Resilience Factors



How to improve resilience – risk or uncertainty?



RISK

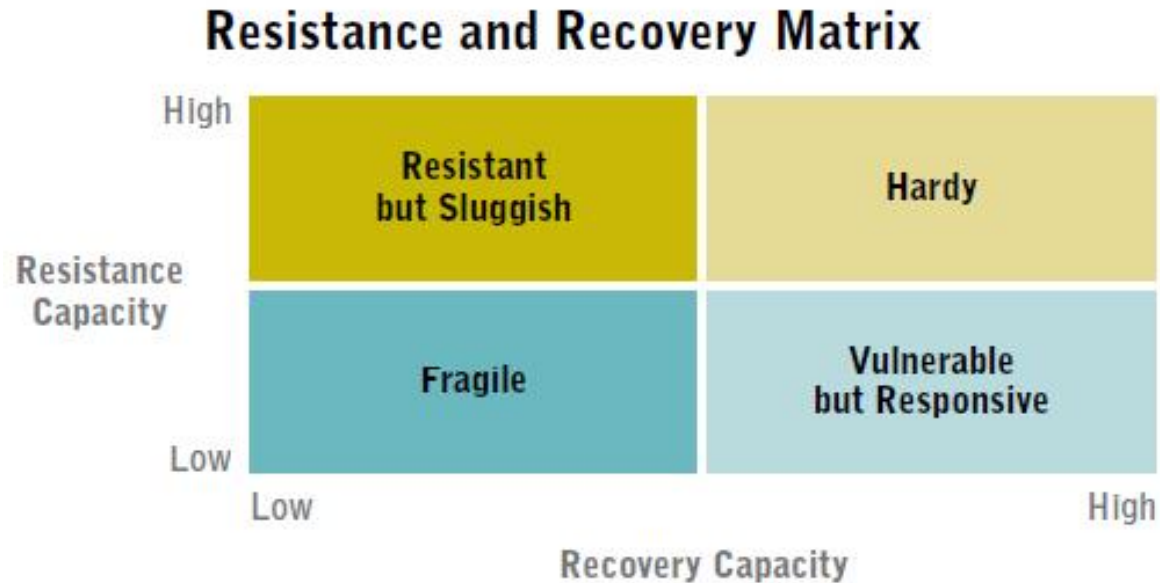
A risk is the possibility of encountering situations that can adversely affect your business.

UNCERTAINTY

Uncertainty considers unpredictable events, that have not been previously encountered



Resilience of supply chain – resistance or recovery?



Source: Michigan State University

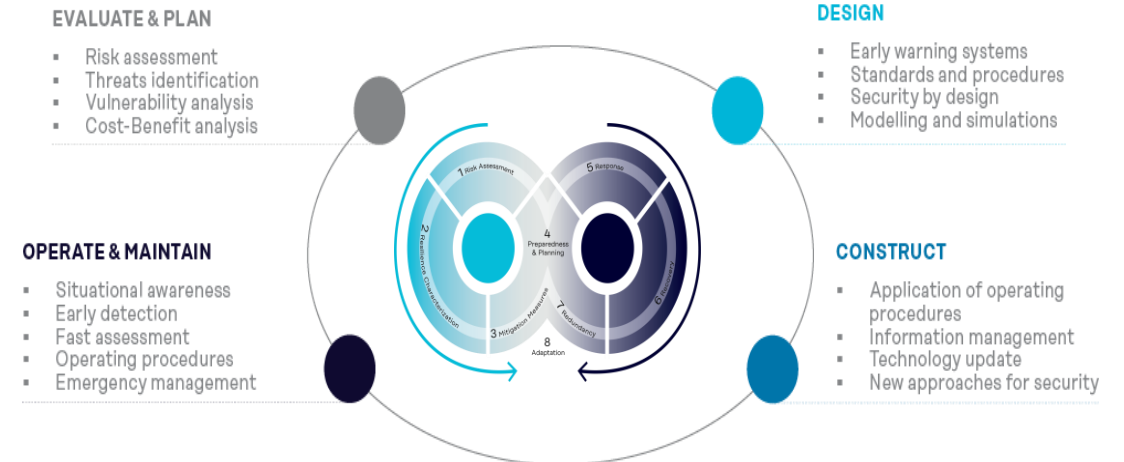
When faced primarily by RISK, you should invest in improving RESISTANCE
When dealing with UNCERTAINTY, you should invest in improving RECOVERY capabilities

Resilience of supply chain: what to do?

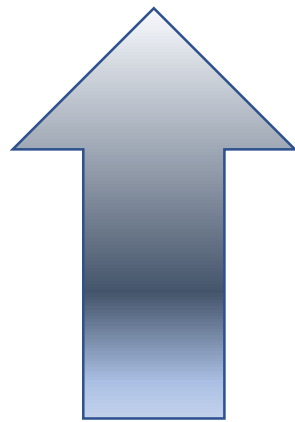


Define Resilience Strategy, Organization and Management for the whole Supply Chain

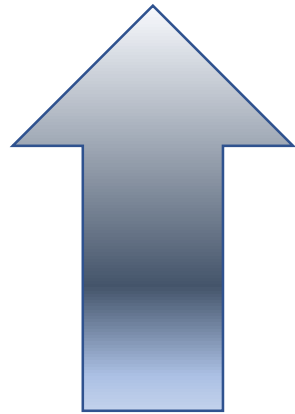
- Evaluate Multi-tier Supplier risk and resilience
- Define a strategy to collect data and create analytics
- Guarantee Compliance and Product Integrity
- Monitoring Resilience for Node and Route of the Network
- Supplier Assessment
- Training and CultureChange



Resilience as an Opportunity for Business

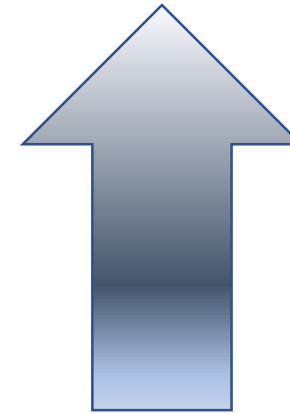
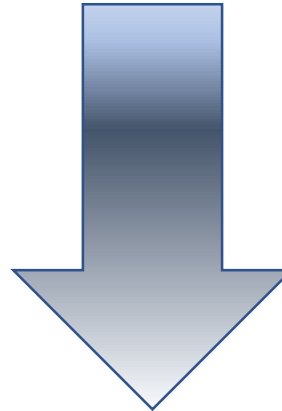


Safety

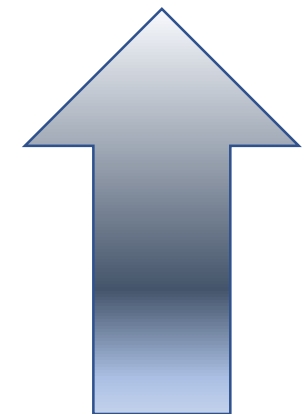


Availability

Loss



Reputation



Profitability

