Enterprise Risk Management (ERM)

Practitioner's Guide To Align Risk Appetite, Risk Tolerance & Risk Thresholds With Strategic, Operational & Tactical Business Planning Activities

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EXECUTIVE SUMMARY

The alternative to risk management is crisis management. This white paper exists to provide practical guidance on Enterprise Risk Management (**ERM**) for cybersecurity and data privacy practitioners, specifically focused on how to align risk appetite, risk tolerance and risk thresholds with an organization's strategic, operational and tactical business planning activities. What is presented is an integrated approach that has practical applications.

If you take the time to read this white paper, we are confident that your understanding of this topic will be greatly enhanced. The concepts of risk appetite, risk tolerance and risk thresholds are not independent terms that are meant to stand by themselves, since they share a dependency that needs to be understood to create a coherent risk management strategy. Likewise, those terms are also directly linked to strategic, operational and tactical decision making.

Organizations invest in cybersecurity and data privacy as a necessity. This necessity is driven in large part by statutory, regulatory and contractual requirements. It is also driven by the desire to protect the organization's brand from acts that would harm its public image. Regardless of the reason, the base expectation is that those charged with developing, implementing and governing the cybersecurity and data privacy functions are doing so in a reasonable manner that would withstand scrutiny that could take the form as an external auditor, regulator or prosecuting attorney.

The intent of this white paper is to prove how integrating business planning with risk management practices is in your organization's best interest, since it can decrease liability and increase the effectiveness those cybersecurity and data privacy practitioners who are working to implement the organization's strategy. Key takeaways are:

- **Take Away #1**: Risk management is not meant to be "bolted on" as an afterthought. Criteria to define and manage risk need to be integrated into the development of mission, vision and strategy statements, since those decisions (or indecisions) directly affect operational objectives, which flows down to the work of individual contributors at the team and department levels.
- **Take Away #2**: How risk is defined needs to be standardized across the organization. A risk designation (e.g., Moderate Risk or High Risk) must share a common definition of financial and/or operational impact across cybersecurity / IT, legal, finance, HR, operations, etc. Standardization enables an "apples to apples" comparison that can aid in creating a more holistic approach to risk management practices when risk designations mean the same thing across the organization.
- **Take Away #3**: Risks and threats are variable - they change and are not static. The implication is that risk ratings and threat assessments are subject to change as the operating environment changes. Logically, this means risk management decisions should not be "written in stone" and must be re-evaluated in a similar context to how recurring business planning practices exist that convene stakeholders to generate updated business plans, as necessary. This infers that the risk appetite, risk tolerance and risk thresholds are meant to be flexible enough to adapt to changing business circumstances that affect an organization's industry, including evolving statutory, regulatory and contractual obligations.
- **Take Away #4**: Goals are not a strategy. This document covers the terminology associated with business planning, so that you have a solid basis to work from, since terminology associated with mission, vision, strategy, etc. are often misused. The reason for its importance is due to the direct influence that business planning activities have on risk management practices.
- **Take Away #5**: Understanding the concept of negligence is important in the context of business planning and risk management, since your organization's businessplan is evidence of due diligence and due care in addressing applicable statutory, regulatory and contractual obligations. Business planning is all about identifying appropriate practices that need to be implemented, generally in a risk-prioritized manner that might span an execution timeline over several years.
- **Take Away #6**: An indicator of a well-run cybersecurity and data privacy program is where staff at all levels clearly know their role in making the organization successful because the leadership implemented a vision, mission and strategy to drive its operations to achieve its stated goals.

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INTRODUCTION

Organizations often face conflicting expectations for risk management, based on department-level practices. For example, where disjointed risk management practices exist, a "Moderate Risk" often has entirely different financial and/or operational impacts across cybersecurity, IT, legal, finance, HR, operations, etc. The concept of Enterprise Risk Management (**ERM**) is to apply a comprehensive, organization-wide approach to risk management practices, where each department operates according to a similar playbook, where "Moderate Risk" means the same thing across the entire organization. This helps make an "apples to apples" comparison that can aid in creating a more holistic approach to risk management practices when risk designations are standardized.

Risk management activities are logical and systematic processes that can be used when making well-informed decisions to improve effectiveness and efficiency. Proactive risk management activities have these characteristics:

- Integrated into Business As Usual (**BAU**) activities (e.g., everyday work);
- Focuses on proactive management involvement, rather than reactive crisis management;
- Identifies and helps prepare for what might happen;
- Identifies opportunities to improve performance; and
- Proposes taking action to:
  - Avoid or reduce unwanted exposures; and/or
  - Maximize opportunities identified.

The articulation of risk management concepts is both an art and science. This requires a clear understanding of certain risk management terminology:

- Risk Appetite;
- Risk Tolerance; and
- Risk Threshold.

Risk management decisions must be explained in the context of the business, since risk management practices do not operate in a vacuum. Therefore, it is crucial to understand the environment where risk management practices exist. This also requires a clear understanding of business planning terminology:

- Mission;
- Vision; and
- Strategy.

From a hierarchical perspective:

- An organization's risk appetite exists at the corporate level to influence actions and decisions, specifically the organization's strategy. The strategy provides prioritization and resourcing constraints to the organization's various Line of Business (**LOB**).
- The risk appetite helps define the organization's risk tolerance to influence actions and decisions at the LOB level. Risk tolerance influences objectives, maturity targets and resource prioritization.
- Risk thresholds affect actions and decisions at the department and team levels. Risk thresholds influence processes, technologies, staffing levels and the supply chain (e.g., vendors, suppliers, consultants, contractors, etc.). Defined risk thresholds provide criteria to assess operational risks that exist in the course of conducting business.

It is acceptable for risk management practices to be:

- Quantifiable (objective);
- Qualifiable (subjective); or
- A hybrid approach that clearly identifies the subjective and object nature of risk analysis practices.

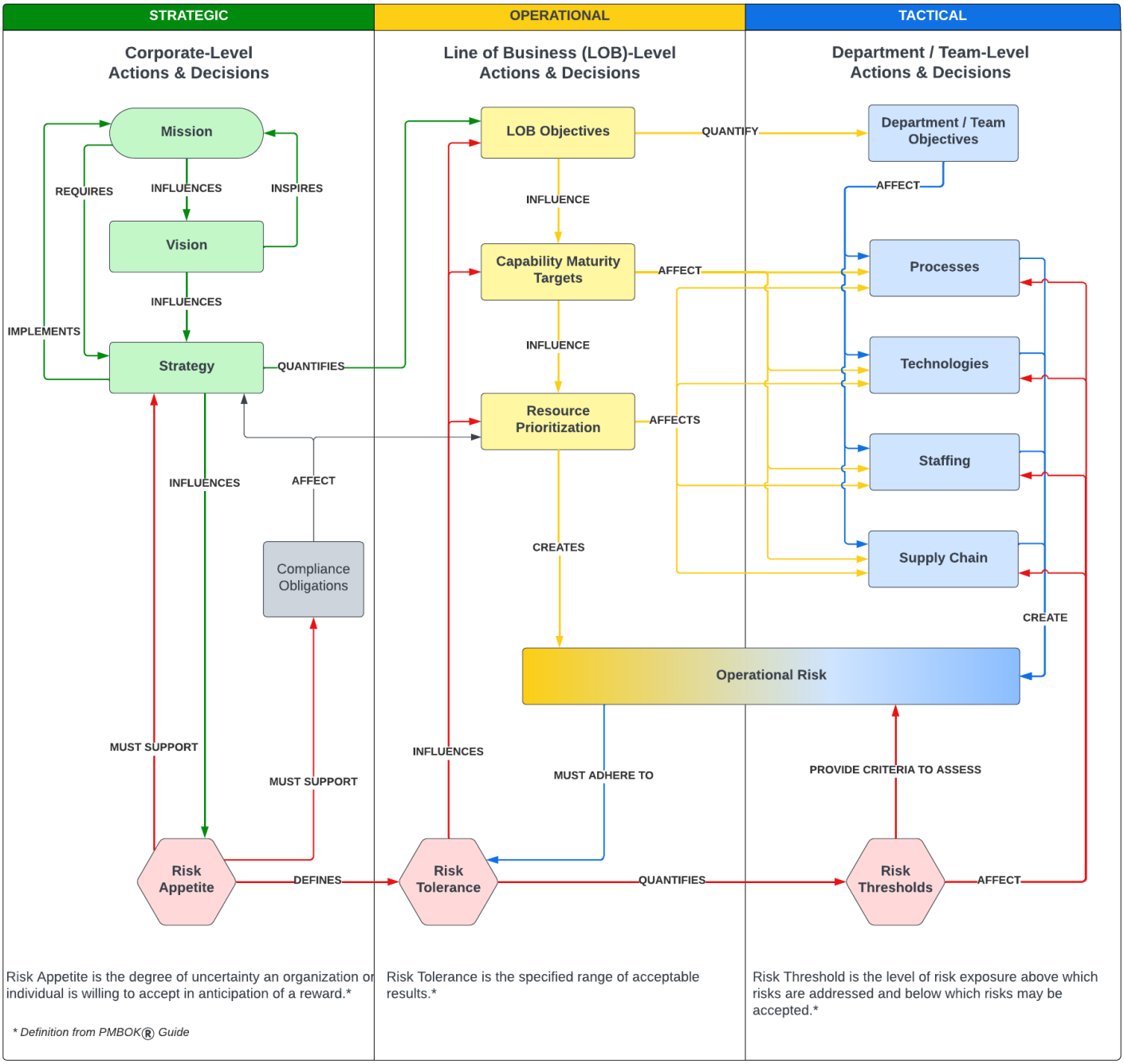
What is important to keep at the forefront of risk management considerations is the material nature of risk, as it pertains to the organization. Risks that have a material impact include, but are not limited to:

- Confidentiality, Integrity & Availability (CIA) of the organization's sensitive/regulated data;
- Supply chain security;
- Macroeconomic forces;
- Socio-political changes;
- Statutory / regulatory changes;
- Competitive landscape;
- Diplomatic sanctions (e.g., taxes, customs, embargoes, etc.); and
- Natural / manmade disasters (e.g., pandemics, war, etc.).

SUMMARIZING THE INTEGRATION OF RISK MANAGEMENT & BUSINESS PLANNING

These key concepts of how risk appetite, risk tolerance and risk thresholds interact with strategic, operational and tactical actions and decisions can be visualized in the following graphic:

- At the strategic layer, where corporate-level actions and decisions are made, the organization's risk appetite is defined. The scope of the risk appetite can be organization-wide or compartmentalized to provide enhanced granularity.
- At the operational level, where Line of Business (**LOB**)-level actions and decisions are made, the organization's risk tolerance is put into practice. The organization's risk tolerance is defined by its established risk appetite.
- At the tactical level, where department / team-level actions and decisions are made, the organization's risk thresholds are used to provide criteria to assess operational risk. That operational risk must adhere to the organization's risk tolerance and therefore, its risk appetite.



Risk Management: Strategic Considerations

At this level, corporate-level actions and decisions define the strategic direction of the organization and its approach to risk management practices:

Mission

- Influences the vision of the organization.
- Requires a strategy to accomplish.

Vision

- Inspires personnel to achieve the mission.

Strategy

- Implements the mission.
- Quantifies "downstream" objectives for Lines of Business (**LOB**)
- Influences the organization's risk appetite.

Compliance Obligations

- Affect the strategy.
- Affect resource prioritization.

Risk Appetite

- Must support the organization's strategy.
- Defines the organization's risk tolerance.

Risk Management: Operational Considerations

At this level, Line of Business (LOB)-level actions and decisions define the operational management of the organization:

Line of Business (LOB) Objectives

- Are quantified and prioritized by the organization's strategy.
- Influence necessary capability maturity targets.
- Quantifies "downstream" objectives at the department / team level.

Capability Maturity Targets

- Are influenced by LOB objectives.
- Influences resource prioritization.
- Affects:
    - Processes that are implemented to achieve objectives;
    - Technologies used to support operations;
    - Staffing levels at the department / team level; and
    - Supply chain quality & security (e.g., vendors, suppliers, contractors, consultants, etc.).

Resource Prioritization

- Creates operational risks.
- Affects:
    - Processes that are implemented to achieve objectives;
    - Technologies used to support operations;
    - Staffing levels at the department / team level; and
    - Supply chain quality & security (e.g., vendors, suppliers, contractors, consultants, etc.).

Risk Tolerance

- Is defined by the organization's risk appetite.
- Influences LOB objectives.
- Quantifies the organization's risk thresholds.

Risk Management: Tactical Considerations

At this level, department / team-level actions and decisions define the tactics used for day-to-day operations:

Department / Team Objectives

- Are quantified and prioritized by LOB objectives.
- Affect:
  - Processes that are implemented to achieve objectives;
  - Technologies used to support operations;
  - Staffing levels at the department / team level; and
  - Supply chain quality & security (e.g., vendors, suppliers, contractors, consultants, etc.).

Processes

- Are affected by:
  - Department / team objectives;
  - Capability maturity targets; and
  - Resource prioritization.
- Create operational risks.

Technologies

- Are affected by:
  - Department / team objectives;
  - Capability maturity targets; and
  - Resource prioritization.
- Create operational risks.

Staffing

- Are affected by:
  - Department / team objectives;
  - Capability maturity targets; and
  - Resource prioritization.
- Creates operational risks.

Supply Chain

- Are affected by:
  - Department / team objectives;
  - Capability maturity targets; and
  - Resource prioritization.
- Creates operational risks.

Risk Thresholds

- Provide criteria to assess operational risks.
- Affect:
  - Processes that are implemented to achieve objectives;
  - Technologies used to support operations;
  - Staffing levels at the department / team level; and
  - Supply chain quality & security (e.g., vendors, suppliers, contractors, consultants, etc.).

Operational Risk

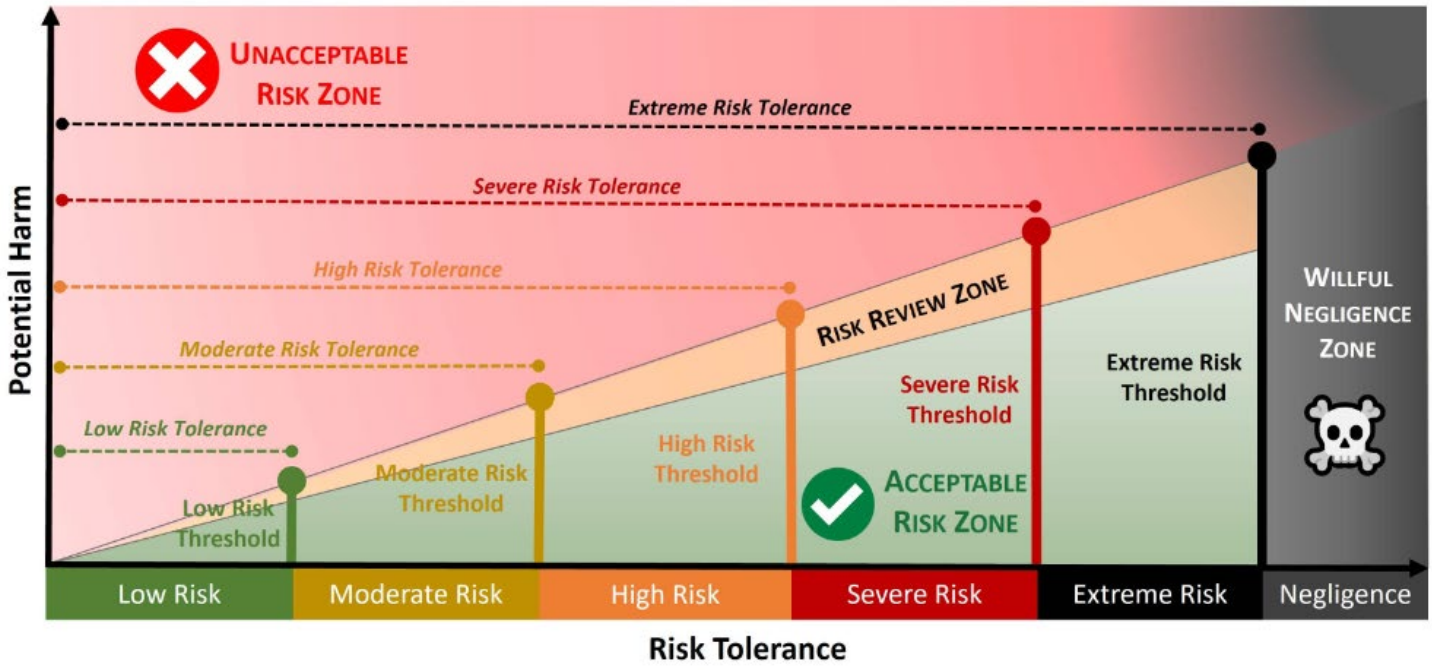
- Is assessed against the organization's risk thresholds.
- Must adhere to the organization's risk tolerance, where the organization has four (4) options to address identified risks:
  1. Reduce the risk to an acceptable level;
  2. Avoid the risk;
  3. Transfer the risk to another party; or
  4. Accept the risk.

Baselining Risk Management Terminology

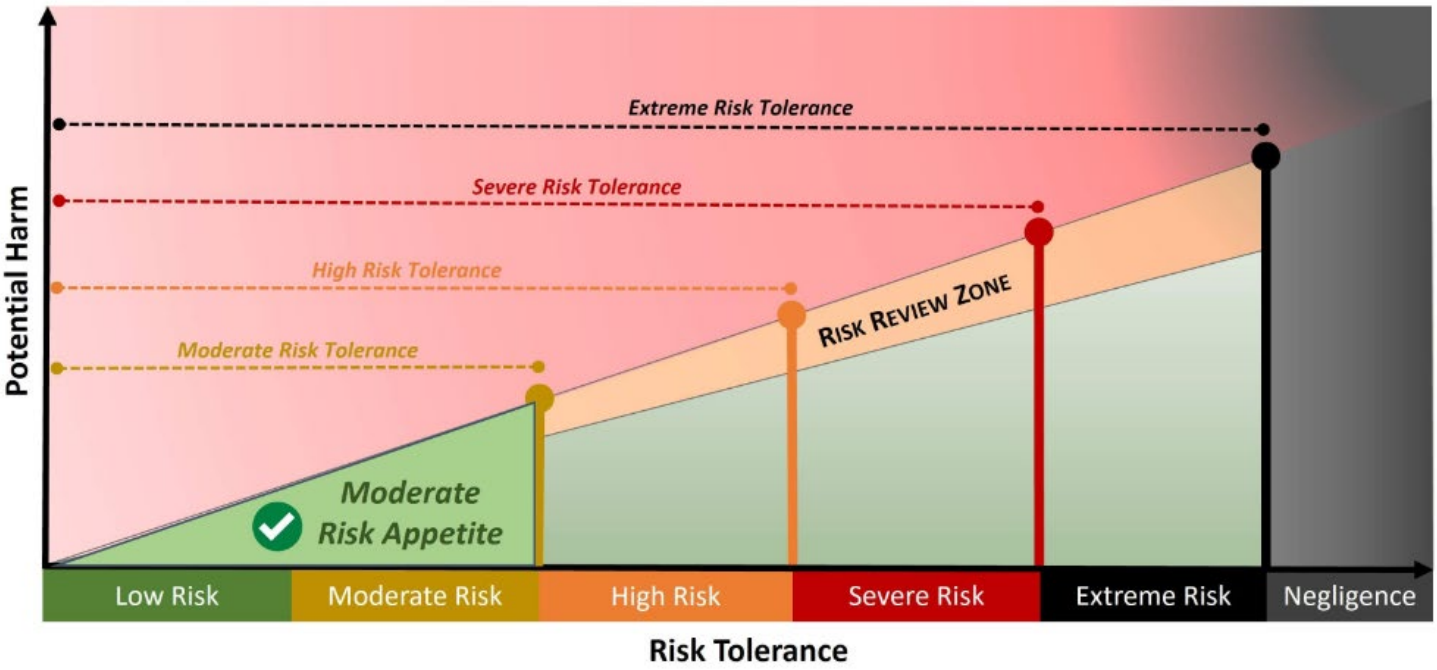
Risk management involves coordinated activities that optimize the management of potential opportunities and adverse effects. Proactive risk management activities provide a way to realize potential opportunities without exposing an organization to unnecessary peril.

The goal of risk analysis is to determine the potential negative implications of an action or situation to determine one (1) of two (2) decisions:

1. **Acceptable Risk**: the criteria fall within a range of acceptable parameters; or
2. **Unacceptable Risk**: The criteria fall outside a range of acceptable parameters.



Building upon the graphic listed above, when viewed from a risk appetite perspective, for an organization that wants to follow a Moderate Risk Appetite, which establishes constraints for allowable and prohibited activities, based on the potential harm to the organization:

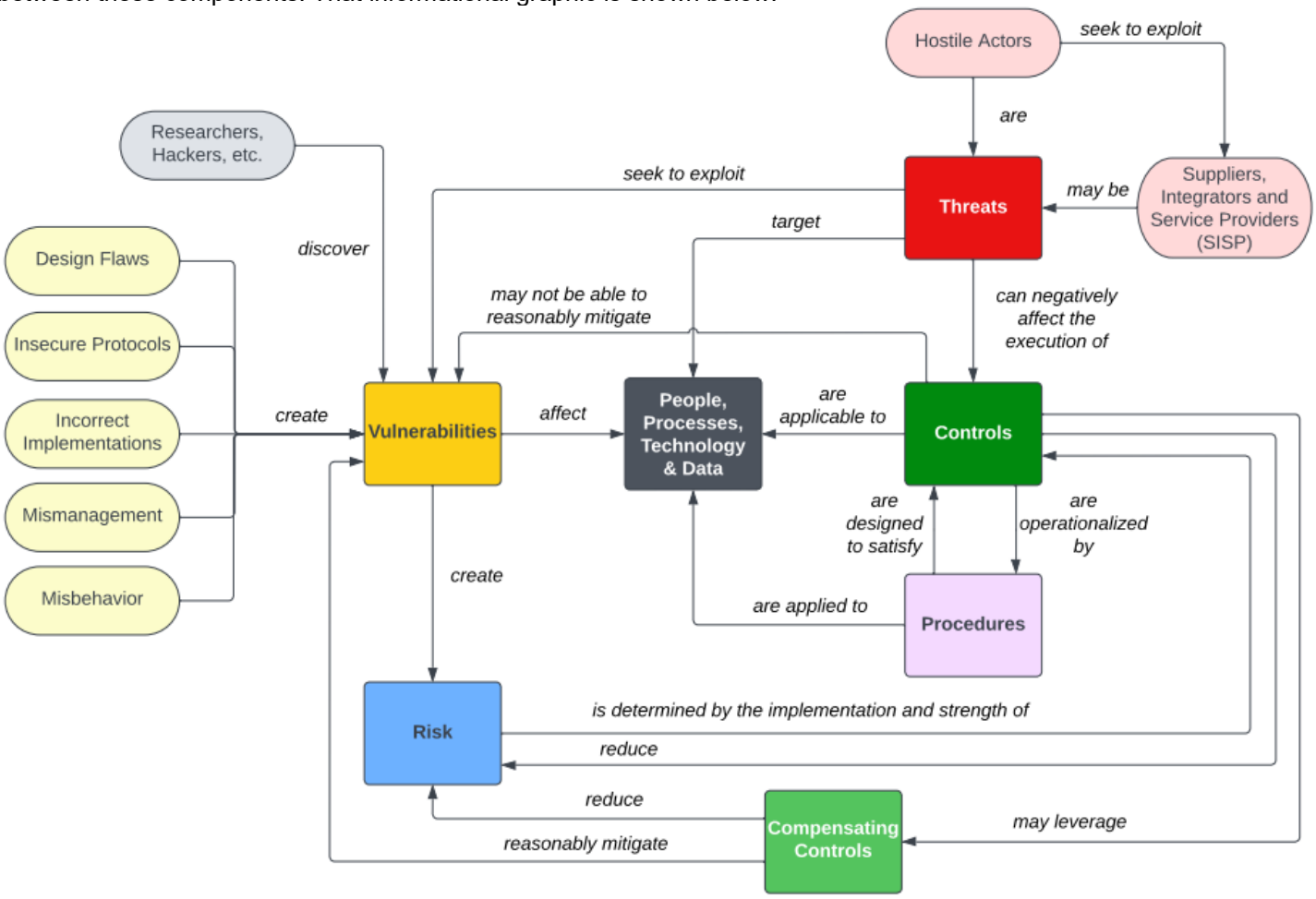


UNDERSTANDING THE DIFFERENCES BETWEEN: RISKS VS THREATS

Risks and threats both tie into cybersecurity and data privacy controls, but it is important to understand the differences:

- A risk exists due to the absence of or a deficiency with a control; but
- A threat affects the ability of a control to exist or operate properly.

ComplianceForge published a "threats vs vulnerabilities vs risks" informational graphic that describes the relationship between these components. That informational graphic is shown below:[1]



WHAT IS A RISK?

In the context of Enterprise Risk Management (**ERM**) practices, "risk" is defined as:

- noun *A situation where someone or something valued is exposed to danger, harm or loss.*
- verb *To expose someone or something valued to danger, harm or loss.*

In the context of this definition of risk, it is important to define underlying components of this risk definition:

- Danger: *state of possibly suffering harm or injury.*
- Harm: *material / physical damage.*
- Loss: *destruction, deprivation or inability to use.*

RISK MANAGEMENT OPTIONS

Traditional risk management practices have four (4) options to address identified risk:

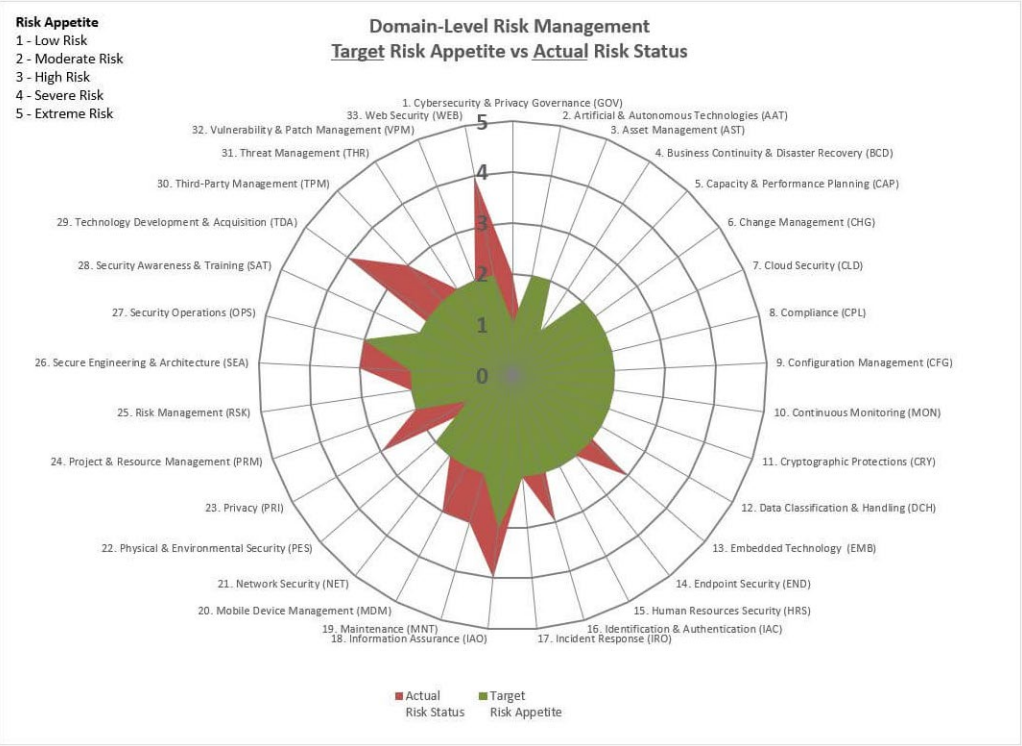
1. Reduce the risk to an acceptable level;
2. Avoid the risk;
3. Transfer the risk to another party; or
4. Accept the risk.

In a mature risk program, the results of risk assessments are evaluated with the organization's risk appetite in consideration. For example, if the organization has a Moderate Risk Appetite and there are several findings in a risk assessment that are

[1] *Risk vs Threat vs Vulnerability Ecosystem - https://content.complianceforge.com/Risk-Threat-Vulnerability-Ecosystem.pdf*

High Risk, then action must be taken to reduce the risk. Accepting a High Risk would violate the Moderate Risk Appetite set by management. In reality, which leaves remediation, transferring or avoiding as the remaining three (3) options, since accepting the risk would be prohibited.

To provide greater flexibility, as well as enhanced situational awareness of risk management practices, it is possible to identify a target risk appetite at a domain-level, rather than a single risk appetite at an organizational-level. Using a review of current risk status vs target risk appetites can be useful to see how well cybersecurity practices operate to clearly see what practice areas deviate from expectations - this can be visualized with a spider / radar diagram, as shown below that applies a risk appetite to each of the thirty-three (33) Secure Controls Framework (**SCF**) domains.



Security & Privacy Risk Management Model (SP-RMM)

To help simplify risk management practices, ComplianceForge and the Secure Controls Framework (**SCF**) jointly developed the Security & Privacy Risk Management Model (**SP-RMM**).[2] The SP-RMM:

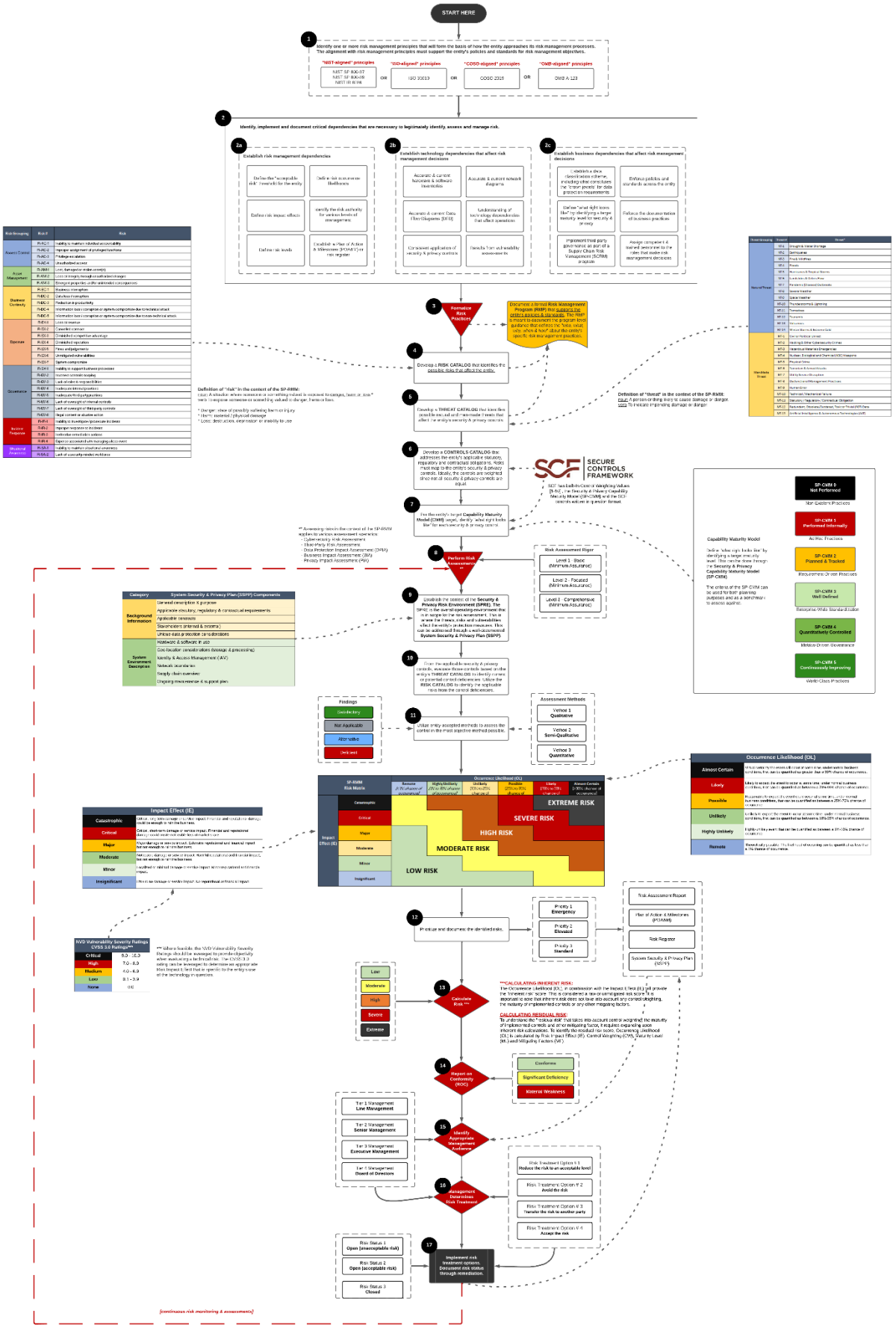
- Is a free solution that organizations can use to holistically approach that breaks risk management down into seventeen (17) distinctive steps;
- Exists is to help cybersecurity and data privacy functions create a repeatable methodology to identify, assess, report and mitigate risk;
- Offers flexibility to report on risk at a control level or aggregate level (e.g., a project, department, domain or organization-level); and
- Guides the decision to a risk treatment option (e.g., reduce, avoid, transfer or accept).

Fundamentally, risk management requires educating stakeholders for situational awareness and decision-making purposes, where reporting risk can be summarized by explaining the "health" of the cybersecurity and data privacy program as to how the assessed controls provide assurance that the organization's stated risk tolerance is or is not achieved. Therefore, the goal of the SP-RMM is to categorize the risk assessment results according to one of the following risk determinations:

- Conforms;
- Significant Deficiency; or
- Material Weakness

[2] *SCF Security & Privacy Risk Management Model (SP-RMM) - https://content.securecontrolsframework.com/projects/SCF-Risk-Management-Model-Overview.pdf*

Security & Privacy Risk Management Model (SP-RMM)



What Is A Threat?

In the context of ERM practices, "threat" is defined as:

- noun *A person or thing likely to cause damage or danger.*
- verb *To indicate impending damage or danger.*

Understanding The Differences Between: Risk Tolerance vs Risk Threshold vs Risk Appetite

According to the Project Management Body of Knowledge (**PMBOK®**) Guide:[3]

- Risk Appetite: *the degree of uncertainty an organization or individual is willing to accept in anticipation of a reward.*
- Risk Tolerance: *the specified range of acceptable results.*
- Risk Threshold: *the level of risk exposure above which risks are addressed and below which risks may be accepted.*

What Is A Risk Appetite?

A risk appetite is a broad "risk management concept" that is used to inform employees about what is and is not acceptable, in terms of risk management from an organization's executive leadership team.

A risk appetite does not contain granular risk management criteria and is primarily a "management statement" that is subjective in nature. Similar in concept to how a policy is a *"high-level statement of management intent,"* an organization's defined risk appetite is a high-level statement of how all, or certain types of, risk are willing to be accepted. [4]

Examples of an organization stating its risk appetite from basic to more complex statements:

- *"[organization name] is a low-risk organization and will avoid any activities that could harm its customers."*
- *"[organization name] will aggressively pursue innovative solutions through Research & Development (**R&D**) to provide industry-leading products and services to our clients, while maintaining a Moderate Risk Appetite. Developing breakthrough products and services does invite potential risk through changes to traditional supply chains, disruptions to business operations and changing client demand. Proposed business practices that pose greater than a Moderate Risk will be considered on a case-by-case basis for financial, operational and legal implications."*

It is important to point out that in many immature risk programs, risk appetite statements are divorced from reality. Executive leaders mean well when they issue risk appetite statements, but the Business As Usual (**BAU**) practices routinely violate the risk appetite. This is often due to numerous reasons that include, but are not limited to:

- Technical debt;
- Dysfunctional management decisions;
- Insecure practices;
- Inadequate funding/resourcing;
- Improperly scoped support contracts (e.g., Managed Service Providers (**MSPs**), consultants, vendors, etc.); and
- Lack of pre-production security testing.

What Is A Risk Tolerance?

Risk tolerance is based on objective criteria, unlike the subjective, conceptual nature of a risk appetite. Defining objective criteria is a necessary step to be able to categorize risk on a graduated scale. Establishing objective criteria to quantify the impact of a risk enables risk assessments to leverage that same criteria and assist decision-makers in their risk management decisions (e.g., accept, mitigate, transfer or avoid).

From a graduated scale perspective, it is possible to define "tolerable" risk criteria to create five (5) useful categories of risk:

1. Low Risk;
2. Moderate Risk;
3. High Risk;
4. Severe Risk; and
5. Extreme Risk.

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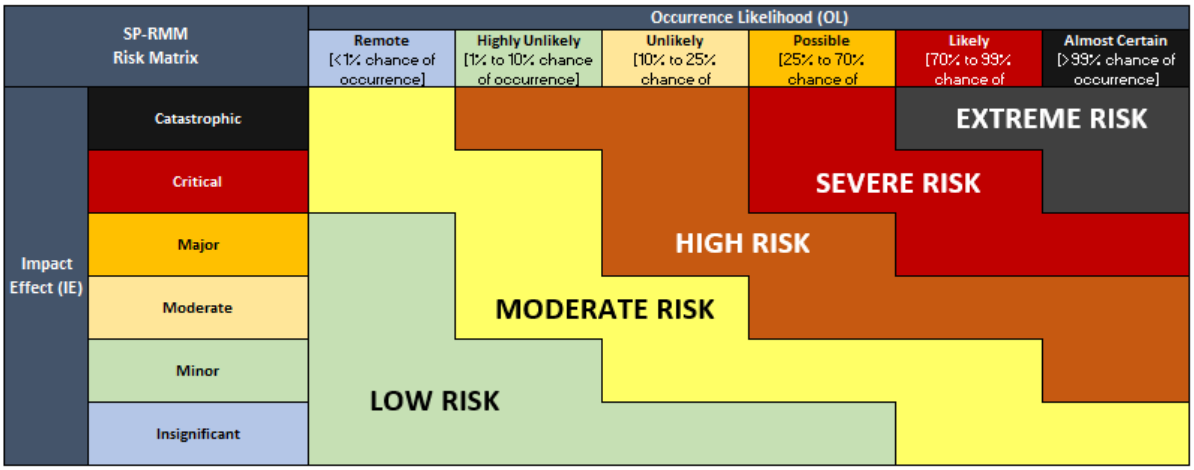
[3] *PMBOK® Guide - https://www.pmi.org/pmbok-guide-standards/foundational/pmbok*

[4] *ComplianceForge Hierarchical Cybersecurity Governance Framework (HCGF) - https://content.complianceforge.com/Hierarchical-Cybersecurity-Governance-Framework.pdf*

There are two (2) objective criteria that go into defining what constitutes a low, moderate, high, severe or Extreme Risk includes:

1. Impact Effect (**IE**); and
2. Occurrence Likelihood (**OL**).



The six (6) categories of IE are:

1. Insignificant *(e.g., organization-defined little-to-no impact to business operations);*
2. Minor *(e.g., organization-defined minor impacts to business operations)*;
3. Moderate *(e.g., organization-defined moderate impacts to business operations)*;
4. Major *(e.g., organization-defined major impacts to business operations)*;
5. Critical *(e.g., organization-defined critical impacts to business operations)*; and
6. Catastrophic *(e.g., organization-defined catastrophic impacts to business operations).*

The six (6) categories of OL are:

1. Remote possibility *(e.g., <1% chance of occurrence)*;
2. Highly unlikely *(e.g., from 1% to 10% chance of occurrence)*;
3. Unlikely *(e.g., from 10% to 25% chance of occurrence)*;
4. Possible *(e.g., from 25% to 70% chance of occurrence)*;
5. Likely *(e.g., from 70% to 99% chance of occurrence)*; and
6. Almost certain *(e.g., >99% chance of occurrence)*.

There are three (3) general approaches are commonly employed to estimate OL:

1. Relevant historical data;
2. Probability forecasts; and
3. Expert opinion.

An organization's risk tolerance is influenced by several factors that includes, but is not limited to:

- Statutory, regulatory and contractual compliance obligations (including adherence to privacy principles for ethical data protection practices).
- Organization-specific threats (natural and manmade).
- Reasonably expected industry practices.
- Pressure from competition.
- Executive management decisions.

Low Risk Tolerance

Organizations that would be reasonably expected to adopt a Low Risk Tolerance generally:

- Provide products and/or services that are necessary for the population to maintain normalcy in daily life.
- Are in highly regulated industries with explicit cybersecurity and/or data privacy requirements.
- Store, process and/or transmit highly sensitive/regulated data.
- Are legitimate targets for nation-state actors to disrupt and/or compromise due to the high-value nature of the organization.
- Have strong executive management support for cybersecurity and data privacy practices as part of “business as usual” activities.
- Maintain a high level of capability maturity for preventative cybersecurity controls to implement “defense in depth”

protections across the enterprise.
- Have a high level of situational awareness (cybersecurity & physical) that includes its supply chain.
- Have cyber-related liability insurance.

Organizations that are reasonably expected to operate with a Low Risk Tolerance include, but are not limited to:
- Critical infrastructure
- Utilities (e.g., electricity, drinking water, natural gas, sanitation, etc.)
- Telecommunications (e.g., Internet Service Providers (**ISPs**), mobile phone carriers, Cloud Service Providers (**CSPs**), etc.) (high value)
- Transportation (e.g., airports, railways, ports, tunnels, fuel delivery, etc.)
- Technology Research & Development (**R&D**) (high value)
- Healthcare (high value)
- Government institutions:
  - Military
  - Law enforcement
  - Judicial system
  - Financial services (high value)
  - Defense Industrial Base (**DIB**) contractors (high value)

Moderate Risk Tolerance

Organizations that would be reasonably expected to adopt a Moderate Risk Tolerance generally:
- Have executive management support for securing sensitive / regulated data enclaves.
- Are in regulated industries that have specific cybersecurity and/or data privacy requirements (e.g., CMMC, PCI DSS, SOX, GLBA, RMF, etc.).
- Have "flow down" requirements from customers that require adherence to certain cybersecurity and/or data privacy requirements.
- Store, process and/or transmit sensitive/regulated data.
- Are legitimate targets for attackers who wish to financially benefit from stolen information or ransom.
- Have cyber-related liability insurance.

Organizations that are reasonably expected to operate with a Moderate Risk Tolerance include, but are not limited to:
- Education (e.g., K-12, colleges, universities, etc.)
- Utilities (e.g., electricity, drinking water, natural gas, sanitation, etc.)
- Telecommunications (e.g., Internet Service Providers (ISPs), mobile phone carriers, etc.)
- Transportation (e.g., airports, railways, ports, tunnels, fuel delivery, etc.)
- Technology services (e.g., Managed Service Providers (**MSPs**), Managed Security Service Providers (**MSSP**s), etc.)
- Manufacturing (high value)
- Healthcare
- Defense Industrial Base (**DIB**) contractors and subcontractors
- Legal services (e.g., law firms)
- Construction (high value)

High Risk Tolerance

Organizations that would be reasonably expected to adopt a High Risk Tolerance generally:
- Are in an unregulated industry, pertaining to cybersecurity and/or data privacy requirements.
- Do not store, process and/or transmit sensitive/regulated data.
- Lack management support for cybersecurity and data privacy governance practices.
- Do not have cyber-related liability insurance.

Organizations that may choose to operate with a High Risk Tolerance include, but are not limited to:
- Startups
- Hospitality industry (e.g., restaurants, hotels, etc.)
- Construction
- Manufacturing
- Personal services

Severe Risk Tolerance

Organizations that would be reasonably expected to adopt a Severe Risk Tolerance generally:
- Are in an unregulated industry, pertaining to cybersecurity and/or data privacy requirements.
- Do not store, process and/or transmit sensitive/regulated data.

- Lack management support for cybersecurity and data privacy governance practices.
- Do not have cyber-related liability insurance.

Organizations that may choose to operate with a High Risk Tolerance include, but are not limited to:
- Startups
- Artificial Intelligence (**AI**) developers

Extreme Risk Tolerance

Organizations that would be reasonably expected to adopt an Extreme Risk Tolerance generally:
- Are in an unregulated industry, pertaining to cybersecurity and/or data privacy requirements.
- Do not store, process and/or transmit sensitive/regulated data.
- Lack management support for cybersecurity and data privacy governance practices.
- Do not have cyber-related liability insurance.

Organizations that may choose to operate with a High Risk Tolerance include, but are not limited to:
- Startups
- Artificial Intelligence (**AI**) developers

What Is A Risk Threshold?

Risk thresholds are directly tied to risk tolerance and utilize organization-specific criteria (e.g., acceptable and unacceptable parameters). These risk thresholds exist between the different levels of risk tolerance (e.g., between Low Risk and Moderate Risk, between Moderate Risk and High Risk, etc.). By establishing these risk thresholds, it brings the "graduated scale perspective" to life for risk management practices. Risk thresholds are criteria that are unique to an organization:
- Organization-specific activities / scenarios that could damage the organization's reputation;
- Organization specific activities / scenarios that could negatively affect short-term and long-term profitability; and
- Organization specific activities / scenarios that could impede business operations.

Risk thresholds are entirely unique to each organization, based on several factors that include:
- Financial stability;
- Management preferences;
- Compliance obligations (e.g., statutory, regulatory and/or contractual); and
- Insurance coverage limits.

Practical Risk Management Example

For an example scenario, a theoretical company is experimenting with Artificial Intelligence (**AI**) to strengthen its products and/or services. Its long-standing risk appetite is relatively conservative, where the company draws a hard line that any risk over Moderate is unacceptable. Additionally, the company has zero tolerance for any activities that could harm its customers (e.g., physically or financially).

Given the necessary changes to ramp up both talent and technology to put the appropriate solutions in place to meet the company's deadlines, there are gaps/deficiencies. When the risk management team assesses the associated risks, the results identify a range of risks from High to Extreme. The reason for these results is simply due to the higher likelihood of emergent behaviors occurring from AI that potentially could harm individuals (e.g., catastrophic impact effect). The results were objective and told a compelling story that there is a realistic chance of significant damage to the company's reputation and financial liabilities from class action lawsuits.

With those results that point to risks exceeding the organization's risk appetite, it is a management decision on how to proceed. What does the CEO / Board of Directors (**BoD**) do?
- Dispense with its long-standing risk appetite for this specific project so that a potentially lucrative business opportunity can exist?
- Is the AI project cancelled due to the level of risk?
- If the CEO/BoD proceeds with accepting the risk, is it violating its fiduciary duties, since it is accepting risk that it previously deemed unacceptable? Additionally, would it be considered negligent to accept high, severe or Extreme Risk (e.g., would a rational individual under similar circumstances make the same decision?)?

These are all very real topics that need to be considered and how risk is managed has significant legal and financial implications.

BASELINING BUSINESS PLANNING TERMINOLOGY

It is important to level-set on a few fundamental business planning components - strategy, operations and tactics. While these terms are used by organizations across the globe, the terms have their origins in military planning where the terms have specific scopes that are important to understand. Hierarchically, tactics support operations and operations support strategy.

STRATEGY > OPERATIONS > TACTICS

The discussion of "strategy vs operations vs tactics" primarily comes down to the concept of defining doctrine. The concepts of strategy, operations and tactics are directly rooted in military planning. The US Army's formalization of this specific doctrine occurred in the 1982 release of **Field Manual (FM) 100-5** as a way to formalize a logical approach to describe the "levels of war" that span from the generals in charge, all the way to the lowly private in the trenches.

In a real-world scenario to gain context, a relevant historical event is *Operation Overlord*, the Allied invasion of Normandy during the Second World War (WW2):

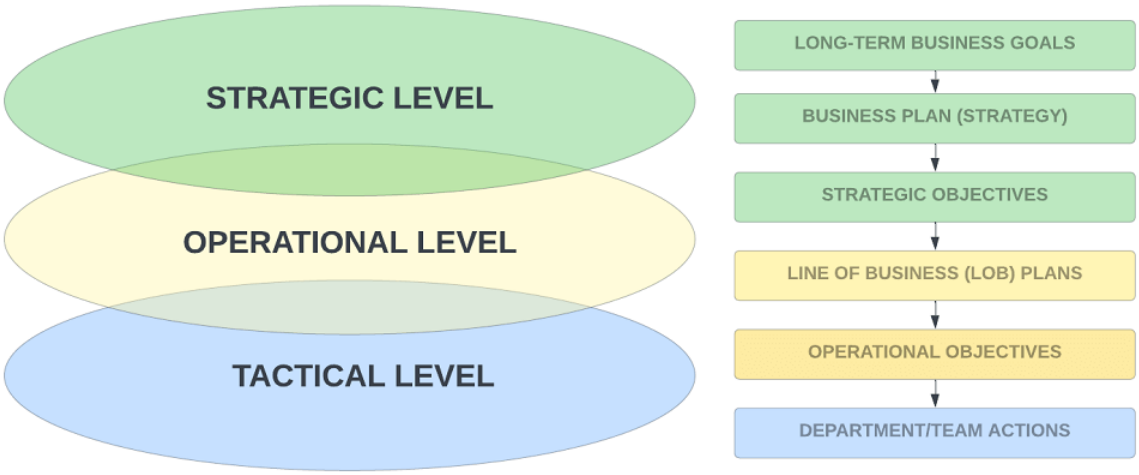
- Strategy. The Allies' high-level plan in Europe was to wage a multi-pronged effort to pressure the Axis powers into an unconditional surrender. This involved the coordination of several heads of state and their military commanders to agree upon a combined approach to win WW2.
- Operations. One of these multi-pronged efforts of the Allied strategy involved opening a new front in western Europe by landing Allied forces in France. The D-Day landings as part of *Operation Overlord* were the effort to invade France via multiple beach landings throughout Normandy in June 1944. This involved the coordination of multiple divisions, branches of the military and nations to deliver the appropriate personnel, equipment and supplies at the right time and locations.
- Tactics. The actions taken by individual Soldiers and small units were designed to support the larger effort of *Operation Overlord*. Each Soldier had a role in his unit and each unit had a role in the beach landings.

THE HIERARCHICAL NATURE OF VISION, MISSION, STRATEGY & OBJECTIVES

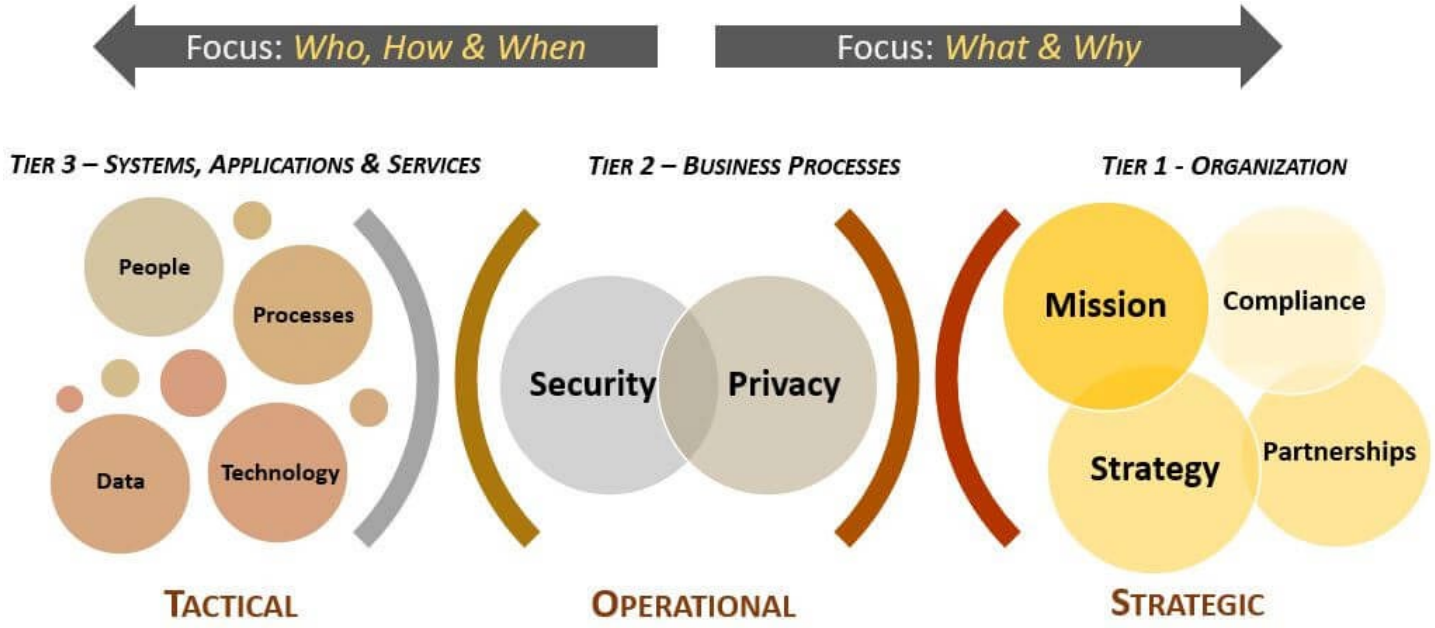
There is overlap between strategic, operational and tactical levels, so there is no clear demarcation that can be uniformly applied to all organizations. The actions of individual contributors at the tactical level stack up to support broader operational goals, which in turn are designed to support a strategy that is aligned with the company's success. As it applies to the private sector:

- Strategic - At the strategic level, an organization employs available resources to secure its business goals & objectives (e.g., corporate business plan).
- Operational - At the operational level, an organization uses available resources to attain those strategic goals & objectives within a specific Line of Business (**LOB**).
- Tactical - At a tactical level, departments/teams employ techniques/procedures to support operational objectives, as defined by the LOB.

The same concept applies to businesses in every industry, since the actions of individual contributors at the tactical level stack up to support broader operational goals, which in turn are designed to support a strategy that is aligned with the company's success.



In the context of cybersecurity & data privacy considerations, it is possible to overlay the "who, what, when, how & why" across the strategic, operational and tactical levels as depicted in the graphic below:



UNDERSTANDING THE DIFFERENCES BETWEEN: MISSION VS VISION VS STRATEGY

An indicator of a well-run cybersecurity and data privacy program is where staff at all levels clearly know their role in making the organization successful because the leadership implemented a vision, mission and strategy to drive its operations. This is leadership in its purest form, since it involves providing appropriate direction and then empowering staff to make the right things happen.

WHAT IS A MISSION STATEMENT?

A mission statement is a concise statement that describes why an organization is operating and thus provides a framework within which strategies are formulated. It describes:

- What the organization does (e.g., present capabilities);
- Who all it serves (e.g., stakeholders, clients, etc.); and
- What makes an organization unique (e.g., reason for existence).

Mission statements are similar to vision statements, in that they, too, look at the big picture. However, mission statements are more concrete and action-oriented:

- Mission statements answer the question of why your department exists. These statements are outcome-oriented and determine the "**what**" and "**why**" in a straightforward, concise manner.
- Missions are directive in nature by a higher authority to a lower authority (e.g., CEO or board of directors issues a mission to the CISO/CIO/COO/CPO).
- The results of mission execution determine performance ratings for executive management.

A mission statement differentiates an organization from others by explaining its broad scope of activities, its products, and technologies it uses to achieve its goals and objectives. For instance,

- Microsoft's mission is "to empower every person and every organization on the planet to achieve more."
- Wal-Mart's mission is "to save people money so that they can live better."

Features of a mission statement:

- It must be feasible and attainable.
- It must be credible so all stakeholders will be able to believe it.
- It must be clear enough so that any action can be taken.
- It should be unique and distinctive to leave an impact in everyone's mind.
- It should be inspiring for all employees (both management and staff).

After having developed possible statements, you will want to ask of each one:

- Does it describe what an organization will do and why it will do it?
- Is it concise (one sentence)?
- Is it outcome oriented?
- Is it inclusive of the goals and people who may become involved in the organization?

Example mission statements:

- *"To deliver high-quality, innovative cybersecurity services and solutions that reduce risk across [company name]."*
- *"To bring inspiration and innovation to every athlete in the world."*
- *"To provide customers with superb value; high-quality, relevant technology; customized systems; superior service and support; and products and services that are easy to buy and use."*
- *"To dedicate ourselves to humanity's quest for longer, healthier, happier lives through innovation in pharmaceutical, consumerand animal health products."*
- *"To provide fast food customer food prepared in the same high-quality manner world-wide that is tasty, reasonably-priced & delivered consistently in a low-key decor and friendly atmosphere."*
- *"To develop & deliver the most innovative products, manage customer experience, deliver quality services that contribute to brand strength, establishes a competitive advantage and enhances profitability, thus providing value to the stakeholders of thebank."*
- *"To be the company that best understands and satisfies the product, service and self-fulfillment needs of women—globally."*

WHAT IS A VISION STATEMENT?

A vision answers the "where we want to be" question. A vision statement should inspire employees to dream and motivate them to take action. Vision statements give employees a reminder about what their organization is attempting to develop. It incorporates a shared understanding about the nature and aim of the organization and utilizes this understanding to direct and guide the organization towards a better purpose.

Vision statements communicate the concept of what ideal conditions look like in a perfect world for the execution of the mission.

- Vision statements are meant to appeal to every staff member and should be easily understood by everyone. Quite simply, if a vision statement must be explained, it is a poorly constructed vision statement.
- This is an executive function performed by the CEO to uplift & inspire across the broader organization.

A vision statement identifies where the organization wants or intends to be in future or where it should be to best meet the needs of the stakeholders. It describes dreams and aspirations for the future. For instance:

- Microsoft's vision is to "help people and businesses throughout the world realize their full potential."
- Wal-Mart's vision is to "build a better world — helping people live better and renew the planet while building thriving, resilient communities."

The best visions are inspirational, clear, memorable, and concise. An effective vision statement must have following features:

- It must be concise.
- It must be unambiguous.
- It must be clear.
- It must harmonize with the organization's culture and values.
- Dreams and aspirations must be rational & realistic.

In order to realize the vision, it must be deeply instilled in the organization, being owned and shared by everyone involved in theorganization. For vision statement validation purposes:

- Will it draw people to common work?
- Does it give hope for a better future?
- Will it inspire employees to realize their dreams through positive, effective action?
- Does it provide a basis for developing the other aspects of your action planning process?

Example vision statements:

- *"We exist to create an environment where security, collaboration and creativity are seamless. In doing so, we will unlock [company name]'s unmeasurable potential to innovate at the speed of inspiration."*
- *"Our vision is to be earth's most customer centric company; to build a place where people can come to find and discover anything they might want to buy online."*
- *"We intend to provide our customers with the best online shopping experience from beginning to end, with a smart, searchablewebsite, easy-to-follow instructions, clear and secure payment methods, and fast, quality delivery."*
- *"The [company name] Company will inspire its employees to be the best they can be. We will engage in sustainable*

practices and anticipate the needs of our customers. We will maximize returns to the stockholders while still maintaining quality in our products. "

- *"Our vision is to bring our students into the 21st century through innovation and modern technology. Learning will be enhanced with computer software and educational games that will allow students to proceed at their own rate according to their ability."*
- *"We will be the premier organization operating locally and internationally that provides the complete range of financial services to all segments under one roof."*

WHAT IS A STRATEGY?

Strategy statements are high-level actions that are coherently arranged to achieve your mission.

- The CEO establishes the big picture of how the company will accomplish its mission.
- Strategies allow for the development of a thoughtfully constructed course of action and the establishment of realistic objectives.
- Business plans are the in-depth documents to implement a strategy through the detailed definition of objectives, resourcing needs and assigning responsibilities.
- The results of strategy execution determine performance ratings for senior leadership (e.g., CISO/CIO/COO/CPO).

Defining the objective, scope and competitive advantage requires trade-offs, which are fundamental considerations to building a strategy. For example, if a company decides to pursue growth, it must accept that profitability will not be a priority. If it decides to serve institutional clients, it may ignore retail customers.

Now that the "what" and "why" are answered with the mission and vision statements, it's time to address the "how" with a strategy that defines how to bring the vision and mission statements to reality. That's where setting goals and objectives come into play with a focus of the importance of making them SMART:

- S – **Specific** (target a specific area for improvement)
- M – **Measurable** (quantify or at least suggest an indicator of progress)
- A – **Actionable** (specifically who will do it)
- R – **Realistic** (state what results can realistically be achieved, based on available resources)
- T – **Time-bound** (specify when the results can be achieved)

Strategic intent:

- Gives a picture about what an organization must get into immediately in order to achieve the company's vision.
- Motivates the people. It clarifies the vision of the company.
- Helps management to emphasize and concentrate on the priorities.
- Influences people to achieve what at first may seem to be unachievable goals.

There are three (3) basic elements of a strategy statement:

1. The objective defines the ends that the strategy is designed to achieve within a specific time frame.
2. The scope is the domain of the business—the part of the business landscape in which your company will operate.
3. The competitive advantage is the essence of your strategy. It determines what you will do differently or better than the competition to achieve your objective.

Example strategy statements:

- *"[company name] will grow from 10,000 to 17,000 financial advisers by 2024 by offering trusted and convenient face-to-face financial advice to conservative individual investors who delegate their financial decisions, through a national network of one-financial- adviser offices."*
- *"[company name] will increase market penetration in the North America SOHO segment by 20% through improvements in product usability, partner marketing, and customer relationship management leveraging our long-term relationships with customers and deep awareness of their business needs."*
- *"We will influence key stakeholders to raise the level of technology and security maturity in [company name] so that compliance requirements are proactively addressed in a 'business as usual' manner. The role of IT security will evolve from actively managing control execution to a validation and reporting role." [CISO-level strategy for a cybersecurity department]*

What Are Objectives?

Objectives are the short and mid-range goals that are arranged and prioritized to achieve the strategy.

- Objectives are merely the steppingstones that are needed to achieve success in accomplishing the strategy.
- Objectives can be as simple as a bullet point list that documents components necessary to achieve the strategy.
- While this list of objectives is "owned" by the CEO, the Line of Business (LOB) executives are responsible for achieving these objectives through formulating and executing the plans for how their unique operations are conducted and resources are prioritized.
- A responsibility assignment matrix (also known as RACI / RASCI diagrams) is a great tool to assign stakeholder roles and responsibilities to ensure objectives are proactively managed.

Example objectives:

- *"Develop, implement and manage Continuous Monitoring (**CM**) capabilities to enable the timely identification and response topotential cybersecurity events."*
- *"Achieve an ISMS maturity level of CMM 3 by 2023 and CMM 4 by 2026."*

What Are Operations?

Operations are mid-level actions that directly link to strategy and objectives – it clarifies how both will actually be accomplished.

- Operations transform strategy and objectives into actionable projects or initiatives that define the required resources for tactics to successfully execute.
- Operations are "owned" by LOB and are responsible for achieving these objectivesin how work is prioritized, resourced and managed.
- Poor execution of operations will prevent or inhibit the successful execution of a strategy.
- The results of operations execution determine performance ratings for LOB-level management (e.g., Vice Presidents, department heads, etc.).

What Are Tactics?

Tactics are low-level actions that directly link to operations – it specifies how department-level objectives will be achieved on a day-to-day basis through staff assignments, processes and procedures.

- Tactics bring together the people, processes, technology & data to successfully accomplish tasks to achieve assigned objectives.
- Poor execution of tactics will prevent or inhibit the successful execution of operations.
- Tactics are "owned" by managers and directors, who are responsible for achieving these objectivesin how work is prioritized, resourced and managed.
- The results of tactics execution determine performance ratings for individual contributors (e.g., risk analysts, engineers,architects, forensic analysts, etc.).

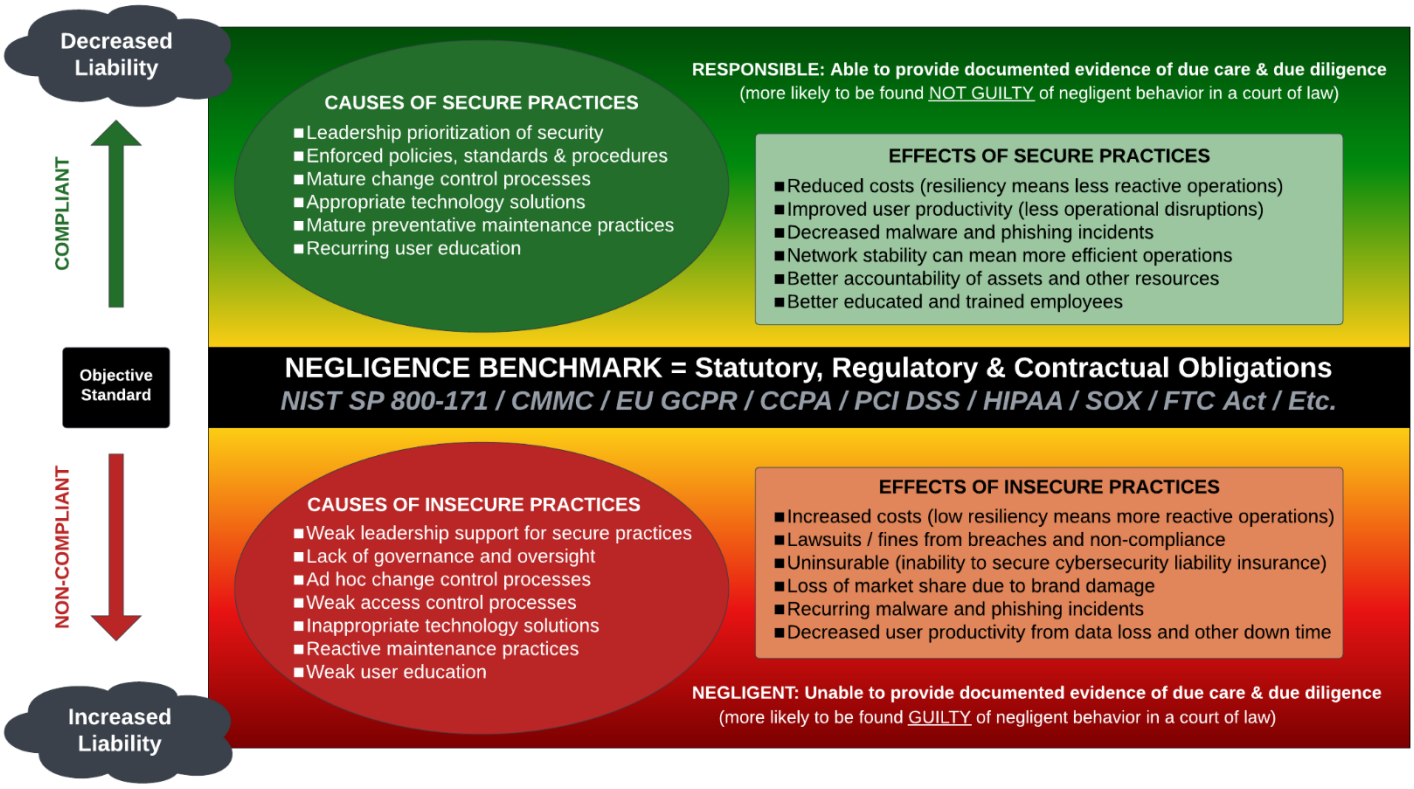
Business Planning Considerations: Avoiding Negligence

It is important to understand the goals for business planning and one of those is to avoid being considered negligent. The Legal Information Institute (**LII**) defines negligence as *"a failure to behave with the level of care that someone of ordinary prudence would have exercised under the same circumstances."*[5]

In the realm of Governance, Risk & Compliance (**GRC**), words have meaning and when you look at the meaning of *"level of care that someone of ordinary prudence"* that addresses the concept of industry-recognized practices (e.g., CMMC, NIST SP 800-171, HIPAA, PCI DSS, ISO 27002, etc.). For many organizations, it is very clear what the minimum requirements are (e.g., NIST SP 800-171 and PCI DSS). Without a justifiable business reason that addresses the need to deviate from a requirement, non-compliance with those objective benchmarks may be considered negligent behavior. It is important to note that both businesses and individuals may be legally and financially liable for injuries caused due to negligence.

Negligence is situationally dependent. For example, an intoxicated driver who gets behind the wheel is negligent. A negligent driver could in reality be a champion race car driver and is not incompetent in any regard. When sober, that individual may be an excellent driver, but driving intoxicated constitutes a negligent act. Negligence has nothing to do with being incompetent!

[5] *LLI - https://www.law.cornell.edu/wex/negligence*



There are quite a few reasons to care about this topic, but a few of particular note include:

- With the multitude of government contractors and their service providers having to comply with NIST SP 800-171, the False Claims Act (**FCA**) is a "go to jail" level offense that impacts both prime and subcontractors. It is also worth noting that whistleblower, or *qui tam*, actions comprise a significant portion of FCA cases that are filed.[6]
- For companies involved in Mergers & Acquisitions (**M&A**), the purchase price might end up including a future class-action lawsuit along with the assets of the company acquired (e.g., Bank of America's 2008 purchase of Countrywide Financial).
- Quality cybersecurity and data privacy practitioners want to make a positive impact and work for a company that takes the topics of cybersecurity and data privacy seriously. They tend to not stick around "sick" companies and risk being tainted by long-term association with the brand when it is clear only lip service is applied to implementing appropriate controls.
- Cybersecurity liability insurance policies generally contain loopholes. While these insurance products are marketed as comprehensive protection, insurers generally cover for incidents resulting from singular employee mistakes during the operation of a computer system or in the handling of digital assets, but not from failing to implement appropriate compliance controls on a broader scale. Insurers are in the business to sell policies, not pay out claims.

Defining Negligence As It Pertains To Cybersecurity & Data Privacy

The following content is leveraged from Cornell's Law School Legal Information Institute (**LII**)[7] to help provide some additional context to the previous points previously explained.

Negligent conduct may consist of either an act, or an omission to act when there is a duty to do so. Primary factors to consider in ascertaining whether the person's conduct lacks reasonable care are:

- The foreseeable likelihood that the person's conduct will result in harm;
- The foreseeable severity of any harm that may ensue; and
- The burden of precautions to eliminate or reduce the risk of harm.

Four (4) elements are generally required to establish a *prima facie* case of negligence:

1. Existence of a legal duty that the defendant owed to the plaintiff (*e.g., complying with NIST SP 800-171 to protect Controlled Unclassified Information (**CUI**)*);

[6] *US Department of Justice - https://www.justice.gov/opa/pr/justice-department-s-false-claims-act-settlements-and-judgments-exceed-56-billion-fiscal-year*
[7] *Cornell's Law School - https://www.law.cornell.edu/wex/negligence*

2. Defendant's breach of that duty *(e.g., failure to protect CUI in accordance with NIST SP 800-171 requirements under applicable DFARS clauses*);
3. Plaintiff's sufferance of an injury (*e.g., financial losses due to lost contract due to non-compliance with NIST SP 800-171*); and
4. Proof that defendant's breach caused the injury (*e.g., publicity about the data breach or other evidence pointing to the entity being the source of the data breach*)

Typically, to meet the injury element of the *prima facie* case, the injury must be one (1) of two (2) things:

1. Bodily harm; or
2. Harm to property (can be personal property or business property (physical or digital)).

Determining A Breach Of Duty

When determining how whether the defendant has breached a duty, courts will usually use the *Learned Hand formula*[8], which is an algebraic approach to determining liability. If *B* < *PL*, then there will be negligence liability for the party with the burden of taking precautions where:

- B = Burden of taking precautions
- P = Probability of loss
- L = Gravity of loss

If the burden of taking such precautions is less than the probability of injury multiplied by the gravity of any resulting injury, then the party with the burden of taking precautions will have some amount of liability.

Determining Whether There Was A Duty To Act

Typically, if the defendant had a duty to act, did not act (resulting in a breach of duty) and that breach of duty caused an injury, then the defendant's actions will be classified as misfeasance. There are several ways to determine whether the defendant had a duty to act (note: this is not an exhaustive list):

- The defendant engaged in the creation of the risk which resulted in the plaintiff's harm;
- The defendant volunteered to protect the plaintiff from harm;
- The defendant knew / should have known that the conduct will harm the plaintiff; or
- Business/voluntary relationships.

[8] *Learned Hand Formula - https://academic.oup.com/lpr/article/5/1/1/990799*

Reporting Risk Findings: Applying The Concepts Of Assurance, Conformity & Materiality

The concepts of assurance, conformity and materiality are integral into meaningful risk management decisions.

Assurance Levels: Defining Criteria For Rigor In Assessing Risk

NIST defines assurance as, *"the grounds for confidence that the set of intended cybersecurity and data privacy controls in a system, application or service are effective in their application."*[9] Since assurance is relative to a specific set of controls, defects in those controls affect the underlying confidence in the ability of those controls to operate as intended to produce the stated results.

Assurance helps define:

- The level of confidence that a stakeholder has that an objective is achieved, that takes into consideration the risks associated with non-conformity (e.g., non-compliance).
- The anticipated, necessary cost to demonstrate conformity with the specified controls.

Risk assessment levels are based on assessment rigor (assurance level). There are three (3) levels of rigor that an organization can select for risk assessments:

1. Basic;
2. Focused; and
3. Comprehensive

Risk assessment rigor pertains to how risk is assessed. The three (3) assessment methods are:

1. Examining,
2. Interviewing; and
3. Testing

The application of each assessment method is described in terms of the attributes of depth and coverage.

- The depth attribute addresses the rigor and level of detail of the assessment.
- The coverage attribute addresses the scope or breadth of the assessment.

Level 1 Risk Assessment: Basic (Minimum Assurance)

Basic risk assessments provide a level of understanding of safeguards necessary for determining whether controls are implemented and free of obvious errors.

Level 2 Risk Assessment: Focused (Moderate Assurance)

Focused risk assessments provide a level of understanding of safeguards necessary for determining whether:

1. Controls are implemented and free of obvious errors; and
2. There are increased grounds for confidence that the safeguards are implemented correctly and operating as intended.

Level 3 Risk Assessment: Comprehensive (High Assurance)

Comprehensive risk assessments provide a level of understanding of safeguards necessary to determine whether:

1. Controls are implemented and free of obvious errors;
2. There are further increased grounds for confidence that the safeguards are implemented correctly and operating as intended on an ongoing and consistent basis; and
3. There is support for continuous improvement in the effectiveness of the safeguards.

Conformity: Defining A Risk Determination

When an organization goes through some form of "certification" process, it undergoes a conformity assessment (e.g., ISO 27001, CMMC, SOC 2, PCI DSS, RMF, etc.). Conformity assessments are designed to assure that a particular product, service, or system meets a given level of quality or safety. Instead of 100% pass criteria, conformity assessments rely on the concept of assurance to establish a risk-based threshold to determine if the intent of the objective(s) has been achieved.

[9] *NIST Glossary - https://csrc.nist.gov/glossary/term/assurance*

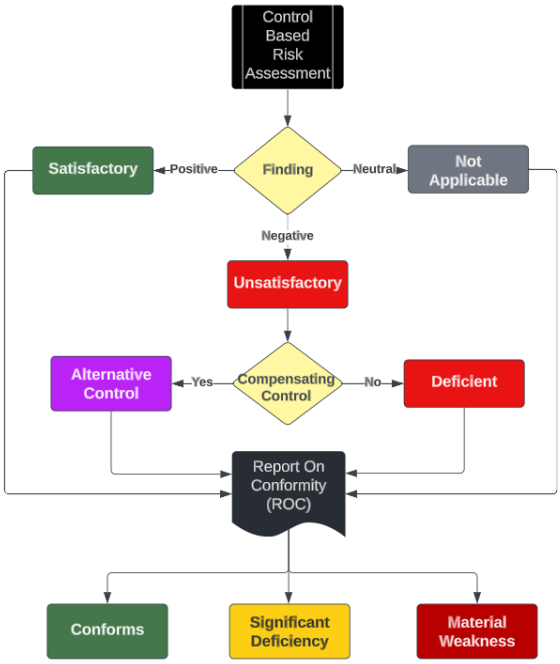
This concept of conformity is relevant as it pertains to how to appropriately message risk assessment findings, since risk management requires educating stakeholders for situational awareness and decision-making purposes. There are many options and formats available to report the results of a risk assessment, but this can be considered a Report on Conformity (**ROC**). The reason for this is a risk assessment is evaluating if an organization's cybersecurity and data privacy practices conform to its stated risk tolerance.

During a risk assessment, controls can be assessed as one (1) of four (4) findings:

1. Satisfactory;
2. Deficient;
3. Not Applicable; or
4. Alternative Control (e.g., compensating control).

This approach can be summarized by reporting to the organization management on the "health" of the assessed controls by one (1) of three (3) following risk determinations:

1. Conforms;
2. Significant Deficiency; or
3. Material Weakness.



Conforms

This is a positive outcome and indicates that at a high-level, the organization's cybersecurity and data privacy practices conform with its selected cybersecurity and data privacy practices.

At the control level, there may be one or more deficient controls, but as a whole, the cybersecurity and data privacy practices support the organization's stated risk tolerance.

A statement that the assessed controls conform indicates to the organization management that sufficient evidence of due care and due diligence exists to provide assurance that the organization's stated risk tolerance is achieved.

Significant Deficiency

This is a negative outcome and indicates the organization is unable to demonstrate conformity with its selected cybersecurity and data privacy practices, due to systematic problems.

This indicates cybersecurity and data privacy practices fail to support the organization's stated risk tolerance. This is less severe than a material weakness, but merits executive leadership attention.

A statement that the assessed controls have a significant deficiency indicates to the organization management that insufficient evidence of due care and due diligence exists to provide assurance that the organization's stated risk tolerance is achieved, due to a systemic problem in the cybersecurity and/or data privacy program.

In the context of a significant deficiency, a systemic problem is a consequence of issues inherent in the overall function (e.g., team, department, project, application, service, vendor, etc.), rather than due to a specific, isolated factor. Systemic errors may require a change to the structure, personnel, technology and/or practices to remediate the significant deficiency.

Material Weakness

This is a negative outcome and indicates the organization is unable to demonstrate conformity with its selected cybersecurity and data privacy practices, due to deficiencies that make it probable that reasonable threats will not be prevented or detected in a timely manner that directly, or indirectly, affects assurance that the organization can adhere to its stated risk tolerance.

This indicates cybersecurity and data privacy practices fail to support the organization's stated risk tolerance.

A statement that the assessed controls have a material weakness indicates to the organization's management that deficiencies are grave enough that it probable that reasonable threats will not be prevented or detected in a timely manner that directly, or indirectly, affects assurance that the organization can adhere to its stated risk tolerance. Essentially, the security and data privacy program are incapable of performing its stated mission and drastic changes to people, processes and/or technology are necessary to remediate the findings.

MATERIALITY: CRITERIA TO ESTABLISH RISK THRESHOLDS

The Secure Controls Framework (**SCF**) defines materiality as, *"A deficiency, or a combination of deficiencies, in an organization's cybersecurity and/or data privacy controls (across its supply chain) where it is probable that reasonable threats will not be prevented or detected in a timely manner that directly, or indirectly, affects assurance that the organization can adhere to its stated risk tolerance."*[10]

In an effort to avoid Garbage In, Garbage Out (**GIGO**) risk management practices, materiality designations can help determine what constitutes reasonable assurance that an organization adheres to its stated risk tolerance. This is where clear findings are useful to understand and report on the health of a cybersecurity and data privacy program:

- Conforms;
- Significant Deficiency; or
- Material weakness.

The intended usage of materiality is meant to provide relevant context, as it pertains to risk thresholds. This is preferable when compared to relatively hollow risk findings that act more as guidelines than actionable, decision-making criteria. Cybersecurity materiality is meant to act as a "guard rail" for risk management decisions. A material weakness crosses an organization's risk threshold by making an actual difference to the organization, where systems, applications, services, personnel, the organization and/or third-parties are, or may be, exposed to an unacceptable level of risk.

HISTORICAL CONTEXT FOR CYBERSECURITY & DATA PRIVACY MATERIALITY USAGE

For Governance, Risk Management & Compliance (**GRC**) practitioners, materiality is often relegated to Sarbanes-Oxley Act (SOX) compliance. However, the concept of materiality is much broader than SOX and can be applied as part of risk reporting in any type of conformity assessment. Financial-related materiality definitions focus on investor awareness of third-party practices, not inwardly looking for adherence to an organization's risk tolerance:

- Per the Security and Exchange Commission (**SEC**), information is material *"to which there is a substantial likelihood that a reasonable investor would attach importance in determining whether to purchase the security registered."*[11]
- Per the International Accounting Standards Board (**IASB**), information is material, *"if omitting, misstating or obscuring it could reasonably be expected to influence the decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity."*[12]

In legal terms, "material" is defined as something that is relevant and significant:

- In a lawsuit, "material evidence" is distinguished from totally irrelevant or of such minor importance that the court will either ignore it, rule it immaterial if objected to, or not allow lengthy testimony upon such a matter.
- A "material breach" of a contract is a valid excuse by the other party not to perform. However, an insignificant divergence from the terms of the contract is not a material breach.

[10] *SCF Cybersecurity Materiality - https://securecontrolsframework.com/cybersecurity-materiality/*
[11] *SEC - https://www.sec.gov/comments/265-24/26524-77.pdf*
[12] *IFRS - https://www.ifrs.org/content/dam/ifrs/project/definition-of-materiality/definition-of-material-feedback-statement.pdf*

REFERENCED FRAMEWORKS & SUPPORTING PRACTICES

This white paper references numerous leading industry frameworks in an effort to provide a holistic approach to cybersecurity and data privacy-related risk management practices. The following external content is a non-exhaustive list of frameworks that either support the implementation of or are referenced by this white paper:

- The National Institute of Standards and Technology (**NIST**): [13]
  - NIST SP 800-37: *Guide for Applying the Risk Management Framework to Federal Information Systems: A Security Life Cycle Approach*
  - NIST SP 800-39: *Managing Cybersecurity Risk: Organization, Mission and Information System View*
  - NIST SP 800-53: *Security and Privacy Controls for Federal Information Systems and Organizations*
  - NIST SP 800-64: *Security Considerations in Secure Development Life Cycle*
  - NIST SP 800-122: *Guide to Protecting the Confidentiality of PII*
  - NIST SP 800-161: *Supply Chain Risk Management Practices for Federal Information Systems and Organizations*
  - NIST SP 800-171: *Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations*
  - NIST IR 7298: *Glossary of Key Cybersecurity Terms*
  - NIST *Framework for Improving Critical Cybersecurity* (Cybersecurity Framework)
- Secure Controls Framework (**SCF**):
  - Security & Privacy Risk Management Model (**SP-RMM**)[14]
  - Cybersecurity Materiality[15]
- ComplianceForge
  - Hierarchical Cybersecurity Governance Framework (**HCGF**)[16]
  - Integrated Controls Management (**ICM**)[17]

[13] *National Institute of Standards and Technology - https://csrc.nist.gov/publications/sp*
[14] *SCF SP-RMM - https://securecontrolsframework.com/risk-management-model/*
[15] *SCF Cybersecurity Materiality - https://securecontrolsframework.com/cybersecurity-materiality/*
[16] *ComplianceForge HCGF - https://content.complianceforge.com/Hierarchical-Cybersecurity-Governance-Framework.pdf*
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