



Risk appetite and tolerance

What they mean and how to use them

David Vose, VP Risk Management, ArcherIRM

Facebook says ...

Be reckless enough to
gamble all or nothing to
follow your dreams.

John Galliano

quote“fancy

Facebook says ...

NOPE!



We're not all
Tom Cruise

What the words mean to non-risk people

appetite

/'æp·ɪ, taɪt/

a desire or need for something, esp. food

tolerance

/'tɒl·ər·əns/

the ability to bear something unpleasant or annoying, or to keep going despite difficulties

And, just for completeness ...

an allowable amount of variation of a specified quantity, especially in the dimensions of a machine or part.

And to ISO¹

appetite

amount and type of risk that an organization is willing to pursue or retain

tolerance

readiness to bear the risk ... in order to achieve objectives



And to COSO²

appetite

the amount of risk that an organization is willing to accept in pursuit of stakeholder value

tolerance

acceptable levels of variation an entity is willing to accept around specific objectives

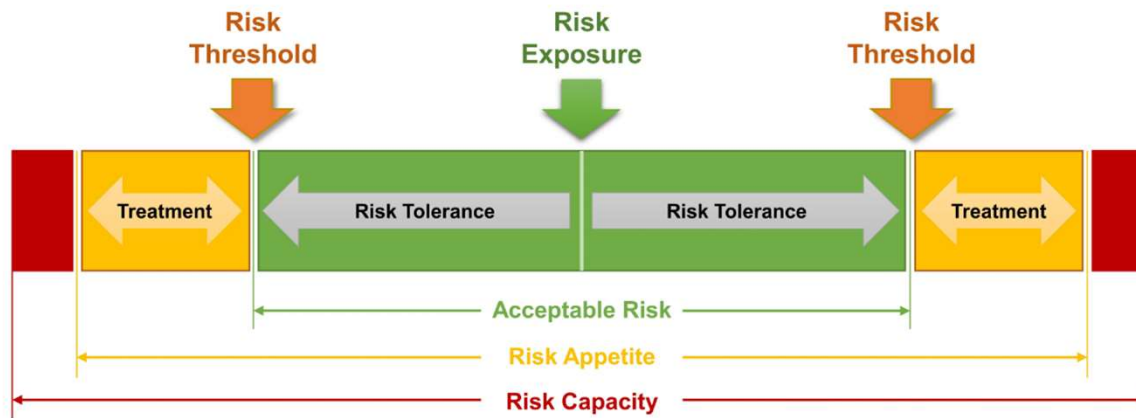


*“For example, an entity that has set a target of a customer satisfaction rating of 90% may **tolerate** a range of outcomes between 88% and 95%. This entity would not have an **appetite** for risks that could put its performance levels below 88%.”*

So ‘Tolerance’ is interpreted as a level of precision, like in building codes or engineering

1. ISO Guide 73:2009(en)
2. “Strengthening Enterprise Risk Management for Strategic Advantage”, COSO 2009

Other contributions ...



Which of these concepts refers to the amount of risk an organization can support in pursuit of its objectives?

You can see how people vote. [Learn more](#)

Risk appetite

Risk tolerance

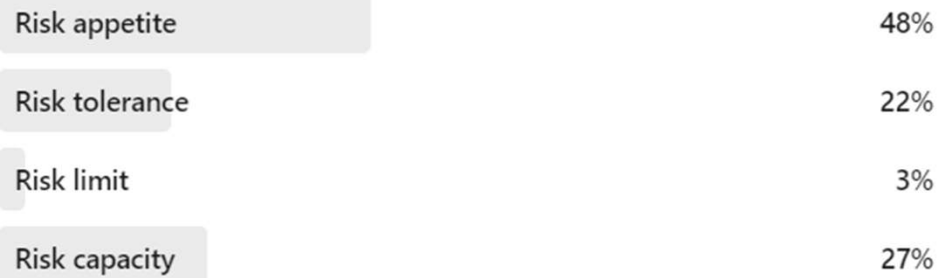
Risk limit

Risk capacity

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Which of these concepts refers to the amount of risk an organization can support in pursuit of its objectives?

You can see how people vote. [Learn more](#)



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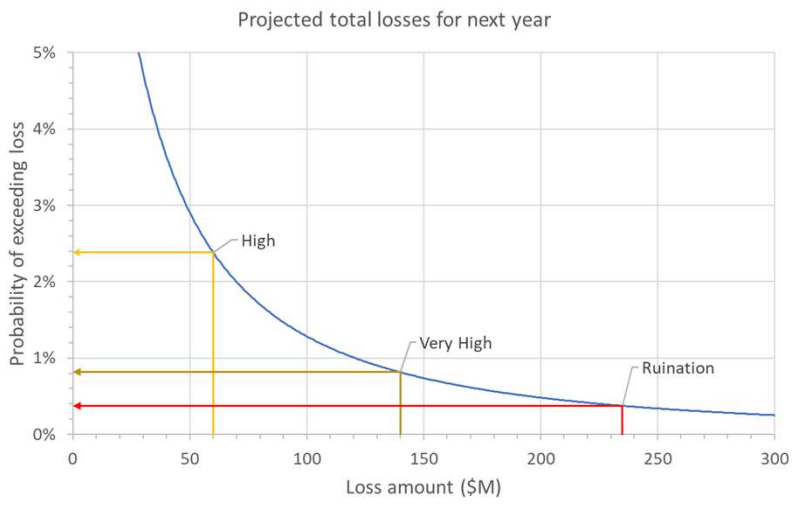
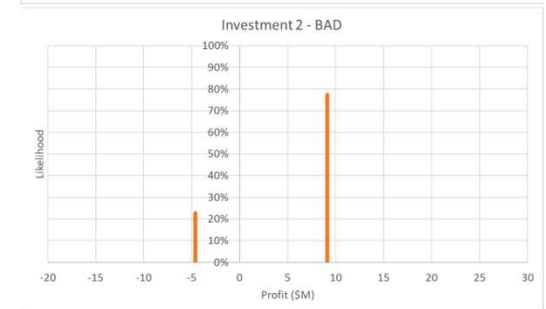
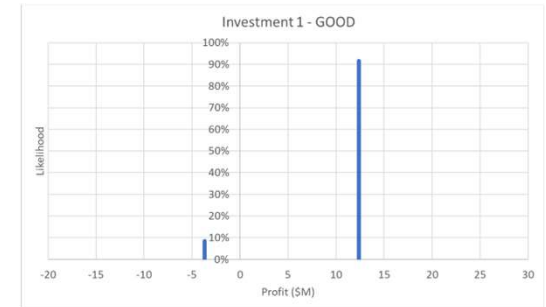
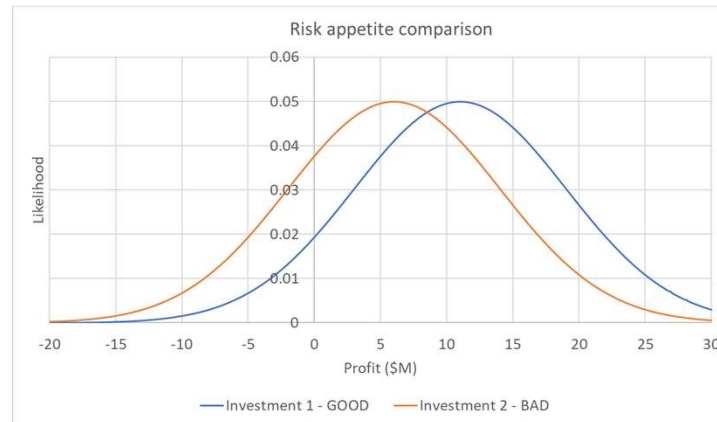
We need consistent definitions

Hopefully ones that can be used in decision-making

I propose ...

appetite

How much risk you'll take against the expected reward (similar to COSO)

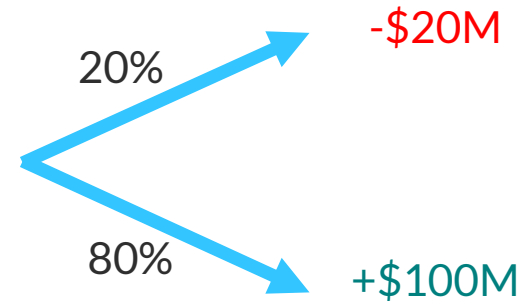


tolerance

The chances you'll accept of experiencing great levels of damage

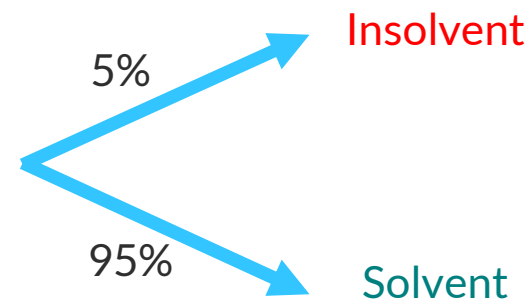
Appetite is about balancing risk and reward

“We should be willing to invest \$20M in this project. It has a 20% chance of being a total loss, but an 80% chance of \$100M profit, that’s a 20:1 return:risk ratio, way above our 5:1 threshold”



Tolerance is about not stretching yourself too far

“Normally, that would be a great investment, but we are already taking a lot of risk elsewhere. Put together, we would increase our chance of going bust to 5%, way above the agreed 1% threshold.”



Your own personal risk management

10:1
return:risk

OK!

Tails you lose
\$1

Heads you win
\$10



10:1
return:risk

No!

Tails you lose
\$100k

Heads you win
\$1M





We're not all
Elon Musk

Application to risk management

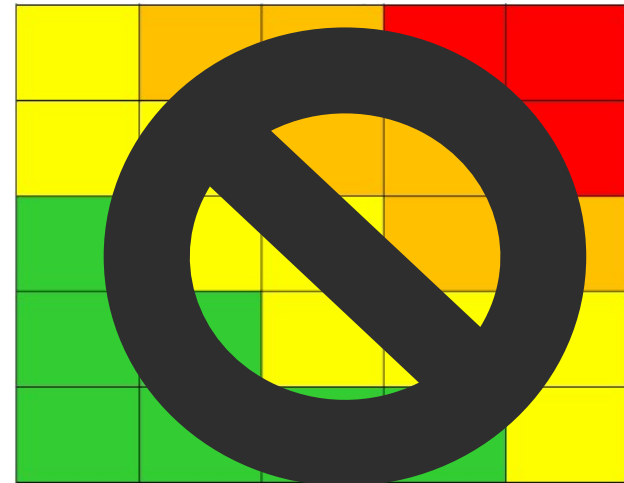
Market, credit, strategic risks

- Risk appetite - dare to take chances to achieve your objectives
- Risk tolerance - keep a tally on the *aggregate* risk exposure not to push it too far

Operational risks

- Risk appetite – there is no risk-return tradeoff, *so this does not apply*
- Risk tolerance – OpRisks add to the tail risk exposure of the business. They need to be included in the aggregate risk exposure

Risk heat maps, appetite and tolerance



Colour regions for appetite, etc. are nonsense. Risks in a heat map are OpRisks

- They have no risk:reward tradeoff
 - So ‘risk appetite’ doesn’t apply
- Tolerance and Capacity apply at an aggregate level, not individually

Defining your risk tolerance level

ENTITIES

Lay out the entity structure

- Parent and child entity tree
- Reflects who 'owns' the risk impacts

IMPACT TYPES

List the types of impact you care about, e.g.

- Financial
- Environmental damage
- Reputation
- Safety
- Carbon footprint
- Human rights violations
- Delays (for projects)

SCALES

Define scales appropriate to the entity

- Quantified units where appropriate
 - E.g. Financial, Carbon, Delays
- Guiding descriptions otherwise
 - E.g. Reputation, Safety, Human rights

Some scales should be ubiquitous

- Because they represent moral values
 - Environmental
 - Safety
 - Human rights

Entities

Copy + New Entity Edit Delete

- Bradford Industries
 - Bradford Medical Devices
 - Bradford Control Systems
 - Bradford Financial Services
 - Bradford Web Services
 - NetGrid
 - SafeNet
 - PublicNet
 - Beginner Inc
 - ESG Inc
 - Reduce Global Carbon Emissions
 - Purchase Forest In Norway
 - Icarus Airlines
 - Muddy Field Oil and Gas
 - Safe Hands Insurance
 - Pinnacle Construction NV
 - Toc Toc Rail Transport, Inc
 - Swede Tech
 - Cybersecurity Risk

Info	Impact Thresholds	Frequency Bins	Access			
Threshold	Financial	Health & Safety	Reputation	Strategic	Environmental damage	
Catastrophic	25,000,000,000 USD	Death of several people	Political pressure to dissolve company	Business collapse	Permanent damage to a highly valued or protected environment. Extinction of a species.	

Preview changes Save changes Cancel changes

What is a reasonable probability of catastrophe?



WHY YOU WILL PROBABLY LIVE LONGER THAN MOST BIG COMPANIES

BIG COMPANIES USED TO HAVE A LIFESPAN OF 61 YEARS, IT'S NOW DOWN TO 18

By IMD Emeritus Professor Stephane Garelli

“ A recent study by McKinsey found that the average life-span of companies listed in Standard & Poor’s 500 was 61 years in 1958. Today, it is less than 18 years. ”

Accepting zero risk is a myth. You might consider something around 1% chance per year to be reasonable.

Other thresholds

If (say) your tolerance for catastrophe is 1% per year, then you should logically accept a higher probability for lower impacts.

First define those lower impact levels.

Then you can see the chance of exceeding them ...

Entities

Copy + New Entity Edit Delete

- Bradford Industries
 - Bradford Medical Devices
 - Bradford Control Systems
 - Bradford Financial Services
 - Bradford Web Services
 - NetGrid
 - SafeNet
 - PublicNet
 - Beginner Inc
 - ESG Inc
 - Reduce Global Carbon Emissions
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 - Swede Tech
 - Cybersecurity Risk

Info	Impact Thresholds	Frequency Bins	Access
Threshold	Financial	Health & Safety	Reputation
Catastrophic	25,000,000,000 USD	Death of several people	Political pressure to dissolve company
Extremely High	8,000,000,000 USD	Death of one person	Public apology from CEO
Very High	2,500,000,000 USD	Life-altering injury to several people	Prolonged scandal
High	900,000,000 USD	Life-altering injury to one person	International news item
Medium High	300,000,000 USD	Long-term hospitalization of several people	National news item
Medium	100,000,000 USD	Long-term hospitalization of one person	Viral campaign on social media
Medium Low	30,000,000 USD	Out-patient treatment of several people	Local news item
Low	10,000,000 USD	Out-patient treatment of one person	Complaint from organized group
Very Low	2,000,000 USD	First aid required for several people	Many comments on social media
Extremely Low	250,000 USD	First aid required for one person	Few complaints on social media, few letters
			Strategic
			Business collapse
			Business drastically restructured and/or reduced
			Partial loss of market position, withdrawal of key brand
			Complete rewrite of business plan
			Dramatic change to business plan
			Significant change to business plan
			Major change to a large project's goals
			Large change to a small project's goals
			Small change to a large project's goals
			Small change to a small project's goals
			Environmental damage
			Permanent damage to a highly valued or protected environment. Extinction of a species.
			Long term damage to a highly valued or protected environment. Gravely endangering a species.
			Short term damage to a highly valued or protected environment. Killing animals from an endangered species.
			Permanent damage to a large rural environment.
			Long term damage to a rural environment. Permanent damage to a small rural environment
			Short term damage to a rural environment. Long term damage to a small rural environment
			Short term damage to a small rural environment
			Short term pollution to a stream or pond. Killing of some local but abundant wildlife
			Large amount of long term unsightly scarring. Some dispersion of waste with no permanent effect
			Small amount of unsightly scarring. Dispersion of small amount of non-biodegradable waste

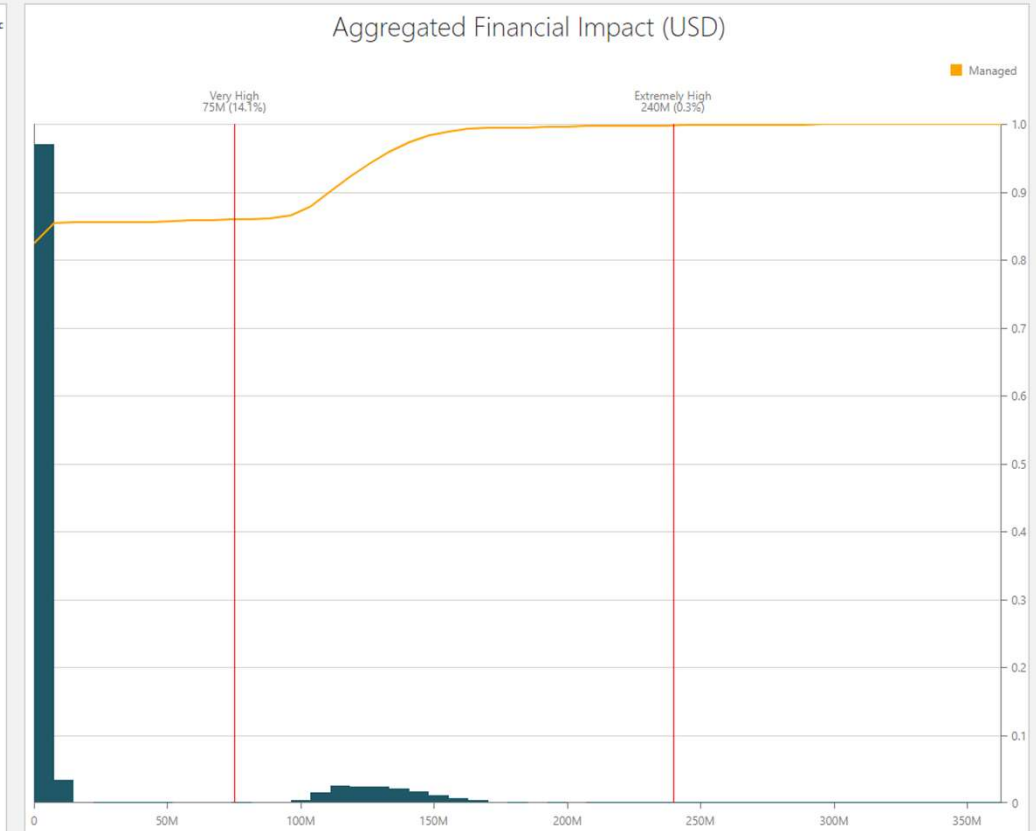
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Financial Exposure

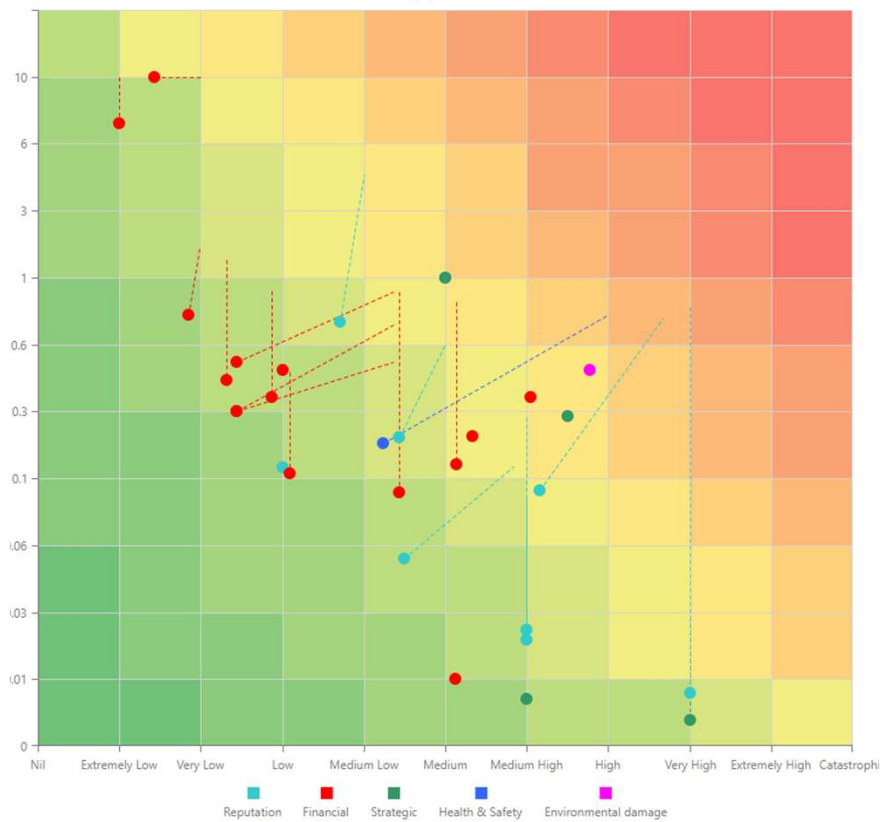
Histogram Unmanaged Potential

Export to ..

Entity	Very High	Extremely High	Catastrophic
Bradford Industries	0%	0%	0%
Bradford Medical Devices	14.1%	0.3%	0%
Bradford Control Systems	0%	0%	0%
Bradford Financial Services	0.3%	0%	0%
Bradford Web Services	0%	0%	0%
NetGrid	0%	0%	0%
SafeNet	0%	0%	0%
PublicNet	0%	0%	0%
Beginner Inc	0.7%	0%	0%
ESG Inc	0%	0%	0%
Reduce Global Carbon Emissions	0%	0%	0%
Purchase Forest In Norway	0%	0%	0%
Icarus Airlines	0%	0%	0%
Muddy Field Oil and Gas	0%	0%	0%
Safe Hands Insurance	0%	0%	0%
Pinnacle Construction NV	0%	0%	0%
Toc Toc Rail Transport, Inc	19.8%	0%	0%
Swede Tech	0%	0%	0%
Cybersecurity Risk	0%	0%	0%



Tolerance exceedance for individual risks



Tolerance exceedance by entity

