Treating, quantifying and timing risk

MODULE 5 | 5.4.2 | STUDENT COMPANION

After the five-step assessment, managers understand each option's risks and how they could affect its goals and the organisation as a whole. The next task is to choose a **cost-effective treatment** for each risk.

Four ways to treat a risk

Eliminate

Remove the source, or drop the option or its risky part. Peak: never store card details; drop the outdoor trips

Accept

Take the chance knowingly, because the rewards justify it. Peak: some older members won't use the app

Reduce

Make it less likely or less severe, even by redesigning the option. Peak: strong passwords, two-step logins, test the provider's security

Share or transfer

Pass some or all of it to another party. Peak: compensation for outages in the contract; cyber insurance; a landlord who funds part of the fit-out

Every control lowers the likelihood or the impact, and must be monitored as conditions change

Every control either lowers the likelihood of a risk or softens its impact, but controls weaken as conditions change. Risk management never stops: monitor, test and replace controls when they no longer work.

Business analytics in risk assessment

Quantitative assessments estimate how likely a risk event is, how severe it would be, and what a treatment would probably achieve. One of the biggest external risks is simply whether the market is big enough to sustain the new strategy.

Technique	What it does	Peak (imagined)
Probability analysis	Estimates the chance of each outcome, for example by running thousands of simulations	Vary membership, prices and costs; count how often the fourth gym loses money
Stress testing	Asks whether the organisation survives if things go badly wrong	Memberships a third below forecast for two years, and higher interest rates: can Peak still repay its loan?
Comparing treatments	Ranks treatment plans against set criteria	Profitability, market share, potential for disruption

A what-if analysis for two of Peak's options

Peak's annual revenue	$6,000,000
Fourth gym: value = $6.0m x 25% of revenue	$1,500,000
Impact of the rival's expansion: $1.5m x 40%	-$600,000
Fourth gym: expected value	**$900,000**
School programs: value = $6.0m x 6% of revenue	$360,000
Impact of school budget cuts: $360,000 x 10%	-$36,000
School programs: expected value	**$324,000**

Value = annual revenue x expected share; impact of risk = value x expected % reduction

The method is deliberately simple. Applying it to every option allows a fair comparison; the most promising options are then modelled in more detail.

Cost-benefit analysis: Peak's booking app

Cost $80,000 up front. Each year: extra bookings, plus $25,000 of staff time saved, less $20,000 of fees. Benefits last four years and are discounted at 10% (annuity factor 3.170).

Scenario	Extra bookings a year	Net benefit a year	Present value (x 3.170)	NPV
Worst	$20,000	$25,000	$79,247	-$753
Expected	$60,000	$65,000	$206,041	$126,041
Best	$100,000	$105,000	$332,836	$252,836

Discounting to **net present value** puts costs and benefits that arrive at different times into today's dollars, and lets options of different lengths be compared. Costs are usually easier to pin down than benefits, so model a range: here the worst case roughly breaks even and the best case is large, an attractive shape.

Timing risk: go early or wait?

Go early		Wait
• Profits before competitors arrive • Risk: failures, returns and refunds • Risk: damage to reputation from unhappy customers • Needs service, systems and processes that fix problems fast	or	• A product that works properly • Risk: rivals claim the market first • Risk: the window of opportunity closes • Needs confidence that demand will still be there

The best window: enough demand exists, but competition is not yet intense

Peak's window (imagined): open the fourth gym before the suburb's population grows and it could lose money for years; wait too long and the rival may claim the suburb first.

Case note: Cyberpunk 2077

CD Projekt's Cyberpunk 2077, first due in April 2020, was delayed three times and launched on 10 December 2020. It was well reviewed on PC but badly bugged on the older PlayStation 4 and Xbox One, and the studio admitted it had not shown those versions before launch. It offered refunds, and on 17 December (US time) Sony removed the game from the PlayStation Store until 21 June 2021. The shares, at a record PLN 464 days before launch, fell to PLN 296 within five days, and a shareholders' class action was later settled for US$1.85 million. After major patches and the 2023 Phantom Liberty expansion, sales passed 40 million copies by July 2026.

Sources: Reuters factbox, 25 September 2023; VGC, 18 December 2020 and 3 July 2026; Game World Observer, 16 December 2021.

Practice questions

MODULE 5 | 5.4.2 | TRY THESE BEFORE THE WORKED ANSWERS

Question 1 - Choose a treatment

Risk for Bassline Festival (an imagined three-day outdoor festival)	Treatment and why
(a) A storm forces one day to be cancelled	
(b) A crowd crush at the main stage	
(c) The headline act cancels	
(d) Minor noise complaints from neighbours	
(e) Fake tickets sold on unofficial resale sites	
(f) A food vendor causes food poisoning	

Question 2 - What-if and cost-benefit

(a) Calculate the value, the impact of the risk and the expected value. (b) Calculate the NPV in each case. (c) Comment.

Item	Tallowwood Furniture (imagined)
Annual revenue	$8 million
Online store's expected share of revenue	10%
Risk: price competition from large online retailers	Could cut that return by 30%
Upfront cost of the online store	$300,000
Net benefit a year, for four years	Expected $120,000; worst $70,000; best $170,000
Annuity factor (8%, four years)	3.312

Question 3 - Launch for Christmas, or wait?

Whizbot Toys (imagined) plans a talking robot for Christmas. Testing shows the voice software crashes about once in every 20 hours of play; a fix needs eight more weeks, meaning a February launch. Rivals are expected to launch similar toys next year. Advise the board.

Worked answers

MODULE 5 | 5.4.2 | WORKED ANSWERS - ATTEMPT THE QUESTIONS FIRST

Question 1 - Bassline Festival

Risk	Treatment (sample answers)
(a) Storm	Share: weather and cancellation insurance; reduce with a wet-weather plan
(b) Crowd crush	Reduce: site design, barriers, capacity limits, trained crowd staff. Never simply accept a risk to life
(c) Headline act cancels	Share: contract clauses and insurance; reduce: a standby act
(d) Noise complaints	Accept, while keeping within sound limits and talking with neighbours
(e) Fake tickets	Reduce: an official resale platform and named tickets
(f) Food poisoning	Share and reduce: require vendor licences and insurance; inspect stalls; eliminate high-risk vendors

Question 2 - Tallowwood Furniture

(a) Value: $8m x 10%	$800,000
Impact of risk: $800,000 x 30%	-$240,000
Expected value	**$560,000**
(b) Expected NPV: $120,000 x 3.312 - $300,000	**$97,440**
Worst-case NPV: $70,000 x 3.312 - $300,000	-$68,160
Best-case NPV: $170,000 x 3.312 - $300,000	$263,040

(c) Positive on average, but the worst case loses money: consider a staged start, such as selling through a marketplace first

Question 3 - Whizbot Toys

- **Going early** captures Christmas sales before rivals arrive, but crashes will bring returns, poor reviews and lasting damage to the brand.
- **Waiting** protects the product's reputation, but misses the biggest selling season.
- **Possible middle path:** launch only if a free update can fix the fault before Christmas Day, with easy returns and honest communication; otherwise launch in February with a strong campaign, since rivals aren't due until next year.