THE FUTURE-READY CFO MASTERCLASS

MODULE 4 OF 20 | PILLAR I: AI, TECHNOLOGY AND DIGITAL INTELLIGENCE

Technology Investment and Digital Economics

MODULE SUMMARY

This module teaches the chief financial officer to judge large technology spending as a capital decision. It covers cloud consumption pricing, reserved commitments and unit costs, how to size security spending with simple loss estimates, and software architecture choices including build versus buy, subscription sprawl and technical debt. It examines artificial intelligence vendor proposals, contract terms, data rights and exit costs. A verified numerical model compares building, buying and partnering over five years with risk adjustment and staged options. The module adds high level accounting guidance, benefit tracking reviews, portfolio governance, a business case template and a stage gate scorecard.

MODULE AT A GLANCE

Core question	How does a CFO judge a large technology investment so that five year cost, risk adjusted benefit and the cost of leaving a vendor are visible before commitment?
Why it matters to the CFO	Technology spending is large, growing, often priced by usage and renewed automatically, so unchecked proposals create costs that no one later controls.
Key sources	FASB ASU 2025-06 (via Deloitte, KPMG, Grant Thornton, EisnerAmper), Deloitte Tech Trends 2026 and CFO Insights, PwC Digital Trust Insights, FinOps Foundation 2026.
Executive artifact	A technology investment business case template and a stage gate scorecard, completed for a fictional case.

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1. Executive overview and learning objectives

The core question. How should a chief financial officer evaluate a large technology investment, whether it is a migration to the cloud, a program of security spending, a new software platform or a contract with an artificial intelligence vendor, so that the full cost over five years, the benefit after risk and the price of leaving the vendor are all visible before the commitment is made? The question differs from a conventional capital request in one important way. Much of the cost of technology is not bought once and depreciated. It is rented by usage, escalated each year under a contract, and renewed automatically, so that the decision made on the first day reaches into budgets that other people will own for years.

Why it matters over the next five years. Deloitte reports in its CFO Insights note of March 19, 2026 that the share of technology budgets devoted to artificial intelligence is expected to rise from 8 percent to 13 percent on average over two years, citing its 2025 Emerging Technology Trends in the Enterprise survey, and that usage based pricing makes these costs harder to forecast than a traditional fixed software licence. The same note observes that the cost of using a model has fallen sharply, by a factor of 280 over two years according to Deloitte's Tech Trends 2026, while rising usage may outpace the savings and produce large monthly bills. The CFO therefore faces a spending category that is growing, variable and only partly visible in the proposal. The same note reports that only 17 percent of finance leaders say their AI investments have delivered clear, measurable value (Deloitte Finance Trends 2026), a figure that should encourage care and not alarm, since it describes the early years of a technology that many companies are still learning to measure.

The structure of this module. Section 2 sets out the vocabulary and the frameworks, beginning with a classification of technology spending and moving through cloud economics, software architecture, return methods and the evaluation of AI vendors. Section 3 gives the methods and works six numerical examples, all computed in Python, a programming language widely used for financial modeling, including a five year comparison of building, buying and partnering. Section 4 places the CFO in a fictional company that must decide on a large cloud commitment, Section 5 prepares the boardroom, Section 6 provides the executive artifact, and Section 7 reports the research that was read. Module 1 explains what AI systems do and cost, Module 5 explains how technology competes with other uses of capital, and Module 10 develops cybersecurity and AI governance, so this module treats those topics only as far as they bear on the investment decision. After completing the module the reader should be able to do the following.

1. Classify technology spending as run, grow or transform, and ask of each class the question that its economics require.
2. Explain consumption pricing, reserved commitments and cloud unit costs, and compute the utilization at which a commitment pays.
3. Size and justify security spending with a simple, range based estimate of annual loss, and connect the result to enterprise risk (Module 10).
4. Judge build versus buy, subscription sprawl, technical debt and platform consolidation in financial terms, and evaluate an AI vendor on cost, dependence, data rights and exit.
5. Compute net present value, payback, five year total cost of ownership and risk adjusted value, and value a staged investment as a real option.
6. Describe at a high level how software and cloud implementation costs are capitalized, and run benefit tracking, post implementation reviews and a portfolio with stage gates and kill criteria.

2. Conceptual foundations and frameworks

Three kinds of technology spending. A request for technology money deserves a first question, which is what kind of money is being asked for. **Run** spending keeps the present business operating, such as hosting, licences, support and security monitoring. **Grow** spending extends the business within its present model, such as a customer portal or a faster order process. **Transform** spending bets on a different way of operating, such as a new pricing engine built on machine learning. The economics differ sharply among the three. Run spending is judged on unit cost and service level, grow spending on a conventional return, and transform spending on staged evidence, since its benefits are the least certain and its costs the most likely to expand. Exhibit 1 sets out the classes and the question the CFO should ask of each.

Exhibit 1 Four Classes of Technology Spending and the Question Each Requires

Class	Typical examples	Main economic test	Question for the CFO
Run	Cloud hosting, licences, support, security monitoring, network	Unit cost and service level, compared with a benchmark and with last year	Is the unit cost falling as volume grows, and who is accountable for it?
Grow	Order to cash platform, customer portal, integration of acquired systems	Net present value, payback and a verified benefit with a named owner	Which benefit lines become cash, and by when?
Transform	AI pricing engine, new digital product, automation of a core process	Staged value with gates, valued as an option, not as a single commitment	What will we know after the first stage that we do not know now, and what will we do if it is bad news?
Mandatory risk	Controls required by regulation, contract or insurance, such as backup and access management	Cost effective reduction of an unacceptable risk, not a financial return	Is the risk quantified, and is this the least costly way to bring it within appetite? (Module 10)

Source: author's framework for teaching, drawn from general practice and not from a single publication. The cross reference to Module 10 concerns risk appetite and cyber governance.

Cloud economics. Cloud computing is the rental of processing, storage and software services from a provider, in place of owning the equipment. The central feature for a CFO is the pricing model. Under **on demand** pricing the company pays a list price for each unit of use, with no commitment, which is flexible and costly. Under a **reserved commitment**, sometimes called a committed use or savings plan, the company agrees to pay for a fixed quantity of use or a fixed dollar amount for one to three years in return for a discount. A commitment converts a variable cost into a fixed one, and therefore transfers the risk of low usage from the provider to the company. **FinOps**, a contraction of financial operations, is the practice of bringing finance, engineering and the business together to manage cloud spending by showing each team what it spends and what the spending buys. The FinOps Foundation's 2026 report, as covered by SD Times on February 19, 2026, found that 98 percent of more than 1,100 respondents now manage AI spend, up from 31 percent two years earlier, and that 90 percent manage software subscriptions, up from 65 percent the year before. The report is a survey of practitioners and describes practice and not outcomes, yet it shows that the discipline has moved from controlling the cloud bill toward managing the value of technology generally. Exhibit 2 compares the main pricing models.

Exhibit 2 **Cloud Pricing Models Compared**

Pricing model	How it works	Advantage	Risk for the company
On demand	Pay the list price for each unit used, with no commitment	Full flexibility, suited to uncertain or short lived demand	Highest unit price, and no protection from price changes
Reserved, one year	Commit to a quantity or a dollar amount for twelve months at a discount	Lower unit price for steady base load	Paying for idle capacity if demand falls below the break even share
Reserved, three year	Commit for thirty six months at a deeper discount	Lowest unit price for load that is truly stable	Long lock in, technology change and migration plans may strand the commitment
Enterprise commitment with true up	Commit to a total spend, often across many services, with a shortfall paid at the end of each period	Negotiated discount and credits, one relationship	Shortfall payment if usage ramps slower than planned. Discount depends on the size of commitment
Spot or interruptible capacity	Use spare capacity at a steep discount, with the right of the provider to reclaim it	Very low cost for work that can be paused	Not suitable for work that must finish on time

Source: author's description of common pricing structures, from general knowledge and not from a single provider's price list. Actual models, names and discounts differ by provider and change often, and must be taken from the contract. FinOps statistics are from the FinOps Foundation 2026 report as covered by SD Times (February 19, 2026).

Cost governance. A cloud program needs an owner for each major cost, a tag or label on every resource so that spending can be traced to a product or team, a monthly review with engineering, and a limit that triggers a conversation when spending departs from forecast. The most useful single measure is the **unit cost**, which is the cloud cost divided by a business measure such as transactions, customers or orders. Total spending that rises while unit cost falls usually indicates a healthy business that is growing, and total spending that rises while unit cost also rises indicates waste or a design problem. The worked examples in Section 3 show why the total alone can mislead.

Software architecture choices. Four choices in the architecture of the enterprise carry large financial consequences. The first is **build versus buy**, which Module 1 introduced for AI and which applies equally to any system. The second is **subscription sprawl**, the accumulation of many software as a service subscriptions, often bought by individual departments, with overlapping functions and unused seats. The third is **technical debt**, the future cost created by shortcuts or by aging systems, which behaves like a liability because it accrues interest in the form of higher maintenance, slower change and more frequent failure, although it appears on no balance sheet. The fourth is **platform consolidation**, the decision to replace several systems with one, which reduces cost and complexity and increases dependence on a single vendor and on the success of a large migration. Exhibit 3 states each choice in financial terms.

Exhibit 3 **Four Architecture Choices Stated in Financial Terms**

Choice	Financial question	Evidence the CFO should request	Common error
Build versus buy	Which option has the lower risk adjusted five year cost, and which leaves the company freer to change?	Five year cost for each option, team size, vendor price escalators, exit cost	Comparing the build cost with the first year subscription, and ignoring the team that must be kept afterward

Choice	Financial question	Evidence the CFO should request	Common error
Subscription sprawl	How much is spent on seats and applications that are unused or duplicated?	Inventory with owner, cost, seats bought and seats active, and renewal date	Reviewing at the department level only, so that no one sees the total
Technical debt	What is the annual cost of keeping the present system, and how fast is it rising?	Maintenance trend, incident cost, the cost of delay in changes, and a replacement estimate	Treating maintenance as a fixed overhead and not as a growing cost
Platform consolidation	Does the saving exceed the migration cost and the added dependence?	Stage plan for migration, retirement dates of old systems, exit terms	Counting the saving before the old systems are switched off

Source: author's framework, from general practice. No statistic is claimed in this exhibit.

Technology return frameworks. Five methods are used to judge a technology investment, and each answers a different question. **Net present value**, or **NPV**, is the sum of the yearly cash flows, each discounted to today at a rate that reflects the company's required return. **Payback** is the time until the cumulative cash flow turns positive. **Total cost of ownership**, or **TCO**, is the full cost of an option over its life, including the one time cost, the recurring cost, the internal team and the cost of leaving. **Risk adjusted benefit** reduces the claimed benefit and increases the claimed cost to reflect the usual experience that benefits arrive late and costs run over. A **real option** is the right, but not the obligation, to make a later investment after learning from an earlier one, so that a staged program is worth more than the same money committed at once. Exhibit 4 shows what each method answers and what it ignores.

Exhibit 4 Five Methods for Judging a Technology Investment

Method	Question it answers	What it ignores	Best use
Net present value	Does the investment earn more than the required return, and by how much in today's dollars?	Risk unless adjusted, and flexibility	Comparing options of similar life on one basis
Payback	How long is the company's money at risk?	Everything after the payback date and the time value of money	A quick screen and a liquidity test
Five year total cost of ownership	What will each option cost, in total, to own?	Benefits, unless the options deliver equal benefits	Choosing among vendors for the same capability
Risk adjusted benefit	What is the benefit if we apply the haircut that experience suggests?	The distribution of outcomes, since it uses a single reduced number	Testing whether the case survives disappointment
Real option value	What is the value of learning before committing the rest?	Requires honest estimates of the chance of success	Transform spending with a decisive uncertainty

Source: author's synthesis of standard capital budgeting practice. Deloitte (CFO Insights, March 19, 2026) notes that traditional return models may be too narrow to capture the full benefit of AI, which is a reason to use several methods and not one.

Evaluating an AI vendor. Module 1 sets out the economics of AI systems, and this module adds the commercial test. A vendor proposal should be read as a package of five commitments, namely what the vendor will implement, what the company will pay once and every year after, who owns the data and the improvements derived from it, how the price may change, and what happens when the contract ends. The proposal usually states the first two clearly and the last three poorly. Deloitte's Tech Trends 2026 guide for CFOs, published March 24, 2026, observes that inference usage has grown faster than cost reductions, which

has pushed some organizations toward on premises deployment, and it advises CFOs to track token use and usage controls. In the same guide Deloitte notes that human labor is sometimes more cost effective than agents, a reminder that the comparison should be made on the full cost per completed task and not on the vendor's price per call. Exhibit 5 lists the terms that deserve a CFO's attention. Contract language is a matter for qualified legal counsel, and the list is a set of questions and not legal advice.

Exhibit 5 Contract Terms for an AI or Software Vendor: Questions for the CFO

Term	Why it matters financially	Position to seek	Fallback
Price escalator	A fixed percentage rise compounds over the life of the contract	A cap tied to a published index, or a fixed cap of a few percent	A cap with a right to terminate if exceeded
Usage and model charges	Variable cost can exceed the plan when volumes or the number of calls per task rise	A price per unit of business output, or a cap on total charges	A volume band with a notice and a review at 80 percent of the cap
Data rights	The vendor may use company data to train its own products or for others	No use of company data to train shared models without written consent. Company owns outputs	Use limited to the service, with deletion on request
Change of model or product	A change by the vendor can alter accuracy and cost, and require rework	Notice period, the right to stay on the prior version for a time, and test support	Credits or termination right if performance falls
Service levels and remedies	Failure of the system affects operations and controls	Measured availability and accuracy targets, with credits	Termination right after repeated failures
Exit and data portability	Without export the company cannot leave without rebuilding	Export of data, prompts, configurations and logs in usable formats, with transition help at stated rates	Escrow of critical materials and a defined wind down period
Term and renewal	Automatic renewal at a higher price removes leverage	Shorter initial term, or a longer term with a ramp, and no automatic renewal without notice	Renewal price fixed at signing

Source: author's checklist from general commercial practice. It is not legal advice, and a qualified attorney must review any contract. Deloitte statements are from the CFO Guide to Tech Trends 2026 (March 24, 2026). Module 1 covers the token economics of AI.

3. Practical applications and tools

Step one: test a cloud commitment against the share of use that will really occur. A reserved commitment pays when the committed capacity is used often enough, and the point at which it ceases to pay is simple to compute. If the discounted rate is 0.32 dollars per unit hour and the on demand rate is 0.50 dollars, then the commitment costs the same as on demand when the committed capacity is used 0.32 divided by 0.50, or 64 percent, of the hours. Above that share the commitment saves money, and below it the company pays for capacity that it does not use. Exhibit 6 applies the arithmetic to a fictional workload of 120 units of steady use all year and a peak of 40 further units for 2,190 hours, which is a quarter of the year. All prices are fictional and chosen for clarity.

Exhibit 6 **Reserved Commitment Arithmetic for a Fictional Workload**

Strategy	Computation	Annual cost (dollars)	Against all on demand
All on demand at 0.50	(120 x 8,760 + 40 x 2,190) x 0.50	569,400	Base
Commit to the 120 steady units at 0.32, peak on demand	120 x 8,760 x 0.32 + 40 x 2,190 x 0.50	380,184	-33.2 percent
Commit to all 160 units at 0.32, including the peak	160 x 8,760 x 0.32	448,512	-21.2 percent
Steady units, three year commitment at 0.22	120 x 8,760 x 0.22 + 40 x 2,190 x 0.50	275,064	-51.7 percent
Break even share of hours used, one year commitment	0.32 / 0.50	64 percent	
Break even share of hours used, three year commitment	0.22 / 0.50	44 percent	

Fictional prices and quantities. Computed in Python. The commitment to the steady units saves 189,216 dollars a year. Committing also to the peak, which is used only a quarter of the hours, costs 68,328 dollars more than committing to the steady units alone, because the peak units are paid for in every hour. If the usage of the 120 committed units fell to 70 percent, the commitment would still cost 336,384 dollars against 367,920 on demand for the same use; at 60 percent it would cost 336,384 against 315,360, and the commitment would then lose money.

Reading the table. The best strategy commits to the load that is certain and leaves the peak on demand, and the worst mistake in the table is to commit to the peak. The three year commitment is cheaper again, 275,064 dollars, but the break even falls only to 44 percent and the company then holds the risk that its architecture, its vendor or its volume will change within three years. A sound policy therefore sets the commitment at a share of the minimum usage observed over the last twelve months, reviews it each quarter, and records the break even utilization beside every commitment so that a falling usage is noticed before a renewal.

Step two: manage cloud cost as a unit cost. A fictional company reports a cloud bill that rose from 2.10 million dollars in the first quarter to 2.75 million dollars in the fourth, an increase of 31.0 percent, while its transactions rose from 50 million to 74 million, an increase of 48.0 percent. A reader who looks only at the total sees an alarming rise. A reader who looks at the unit cost sees a fall from 4.20 cents to 3.72 cents per transaction. Exhibit 7 takes the analysis one level further by separating the two products, and the lesson concerns what an average conceals.

Exhibit 7 **Cloud Unit Cost by Product (fictional)**

Measure	Q1 spend (millions)	Q1 transactions (millions)	Q1 cost per transaction (cents)	Q4 spend (millions)	Q4 transactions (millions)	Q4 cost per transaction (cents)
Product A	1.20	30	4.00	1.35	44	3.07
Product B	0.90	20	4.50	1.40	30	4.67
Total platform	**2.10**	**50**	**4.20**	**2.75**	**74**	**3.72**

Fictional data, computed in Python. Cost per transaction in cents is spend divided by transactions multiplied by 100. Product A improved from 4.00 to 3.07 cents while Product B worsened from 4.50 to 4.67 cents, and the improvement in the total conceals the deterioration in Product B.

What the unit cost teaches. The total platform improved, and Product B did not. Its spending rose 56 percent on a rise of 50 percent in volume, so each transaction costs more, which is the pattern that a design problem

or an idle resource produces. The CFO should ask engineering to explain the cause, to set a target unit cost for each product, and to report the measure with the monthly financial package. A discipline of this kind, which the FinOps community describes as bringing financial accountability to variable spending, costs little and tends to find savings in the first review.

Step three: size security spending with a simple loss estimate. A company cannot buy certainty, and a request for security money should therefore be tested like any other, by asking what loss it reduces and at what cost. The simplest method multiplies the estimated annual frequency of an event by the estimated loss when it occurs, a quantity called the **annualized loss expectancy**, and compares the reduction produced by a control with the control's annual cost. The frequencies and losses are uncertain, and the method is useful only if the estimates are shown as ranges and are reviewed by those who understand the threats. Module 10 develops enterprise risk, cyber governance and the more rigorous quantification methods. PwC reports in its press release of October 1, 2025 for the 2026 Global Digital Trust Insights survey of 3,887 executives that 78 percent expect their cyber budgets to grow, that AI is the leading investment priority at 36 percent, and that only 6 percent feel very capable across all the areas surveyed. A budget that rises without a stated link to loss reduction invites the question that this example answers. Exhibit 8 sets out three fictional threats and a control.

Exhibit 8 Simple Annual Loss Estimate and the Return on a Control (fictional, millions of dollars)

Threat (fictional company)	Annual frequency	Loss per event (millions)	Annual loss expectancy (millions)
Ransomware with business interruption	8 percent	18.0	1.44
Payment and invoice fraud through email	50 percent	0.40	0.20
Loss of customer data	5 percent	25.0	1.25
Total expected annual loss			**2.89**
Control package: immutable backups, network segmentation, mail controls (annual cost 0.60)			
Low effect: ransomware frequency down 20 percent, severity down 25 percent		Reduction 0.58	Net of cost (0.02); return -4 percent
Base effect: frequency down 35 percent, severity down 40 percent		Reduction 0.88	Net of cost 0.28; return 46 percent
High effect: frequency down 50 percent, severity down 55 percent		Reduction 1.12	Net of cost 0.52; return 86 percent

Fictional frequencies and losses, computed in Python. Reduction = f x s - f x (1 - frequency cut) x s x (1 - severity cut), for the ransomware line with f = 0.08 and s = 18.0. Base case: 1.440 - 0.052 x 10.8 = 0.878. The control breaks even if it cuts the ransomware loss by 41.7 percent (0.60 / 1.44). The return is (reduction less cost) divided by cost. The estimates are illustrations and a real estimate needs threat intelligence and expert review.

Reading the estimate. The control costs 0.60 million dollars and removes between 0.58 and 1.12 million dollars of expected loss, so that it pays in the base and high cases and falls just short in the low case. The break even is the useful number, since the CFO need not believe any single estimate to see that the control pays if it removes about 42 percent of the expected ransomware loss, and the security leader can be asked to defend whether the control is likely to do so. Two cautions apply. The method says nothing of the severe event outside the range of experience, which is why insurance, resilience planning and tolerance for a loss that would threaten the company belong to Module 10 and Module 12. And a company may spend on a control that is required by regulation or by contract whatever the arithmetic says, and the arithmetic then tells it only

whether the least costly design was chosen. Disclosure obligations that follow a security incident are matters for qualified legal counsel and for the reporting work described in Module 11.

Step four: find the sprawl and measure the debt. A subscription inventory costs a few weeks of effort and usually pays for itself. In a fictional company with 140 software subscriptions, the licensed seats number 14,000 at an average of 600 dollars a year, a spending of 8,400,000 dollars, and only 9,100 seats, or 65 percent, were active. The unused seats cost 2,940,000 dollars a year, and if renewals are rightsized so that 60 percent of that cost is recovered the saving is 1,764,000 dollars. In addition 38 of the applications overlap in function with another, and retiring half of them at an average cost of 45,000 dollars saves 855,000 dollars. FinOps Foundation data, as covered by SD Times, show that 90 percent of respondents now manage software subscriptions as part of technology cost management, which suggests that the practice is becoming ordinary. Exhibit 9 summarizes the inventory result.

Exhibit 9 Subscription Inventory: Sprawl and Reclaimable Cost (fictional)

Item	Computation	Result
Seats licensed, average price	14,000 seats at 600 dollars	8,400,000 dollars a year
Seats active in the last ninety days	9,100 of 14,000	65 percent
Cost of unused seats	(14,000 less 9,100) x 600	2,940,000 dollars
Recoverable at renewal, 60 percent of unused	0.60 x 2,940,000	1,764,000 dollars
Overlapping applications retired, half of 38	19 x 45,000	855,000 dollars
Total identified saving	**1,764,000 + 855,000**	**2,619,000 dollars**

Fictional. Computed in Python. The saving is available only at renewal dates and requires that business owners accept fewer seats. The average annual cost of 45,000 per overlapping application is an assumption.

Technical debt as a liability. A legacy order system costs 3.20 million dollars a year to maintain, a figure that rises 10 percent a year as skilled staff leave and fixes become harder, and incidents add 0.50 million dollars rising 25 percent a year. A modernization costs 5.00 million dollars at the start and 1.60 million dollars a year to run. Over five years, keeping the old system costs 23.64 million dollars in total and a present value of 17.53 million at 10 percent, while modernizing costs 13.00 million, with a present value of 11.07 million. The yearly interest on the debt, measured as the excess of the cost of keeping over the cost of running a modern system, rises from 2.10 million dollars in the first year to 4.31 million in the fifth. Exhibit 10 gives the detail.

Exhibit 10 Technical Debt: Cost of Keeping a Legacy System Against Modernizing (fictional)

Million dollars	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Present value at 10%
Keep: maintenance	0.00	3.20	3.52	3.87	4.26	4.69	19.54	14.55
Keep: incidents	0.00	0.50	0.62	0.78	0.98	1.22	4.10	2.98
Keep: total cost	**0.00**	**3.70**	**4.15**	**4.65**	**5.24**	**5.91**	**23.64**	**17.53**
Modernize: one time and run	5.00	1.60	1.60	1.60	1.60	1.60	13.00	11.07
Interest on the debt (keep less modernize run)	n/a	2.10	2.55	3.05	3.64	4.31		

Fictional. Computed in Python. Maintenance 3.20 x 1.10 per year; incidents 0.50 x 1.25 per year; costs shown in Years 1 to 5 and discounted at 10 percent from Year 0. The comparison omits benefits of faster change that modernization may bring, and the risk that

migration runs over its cost.

Step five: compare building, buying and partnering over five years. Cresthaven Packaging Group (fictional) proposes to replace its order to cash process with a new platform. At full run rate the platform is expected to produce 9.0 million dollars a year of cash benefit, made up of 4.2 million of avoided labor and outside cost, 3.0 million of recovered billing leakage and 1.8 million of avoided legacy maintenance. Three paths are open. The company may **build** the platform with its own engineers, **buy** a packaged product with a subscription, or **partner** with a vendor that supplies the platform and a managed service. All amounts are in millions of dollars, before tax, over Year 0 and five further years, discounted at a 10 percent hurdle rate. Each option is evaluated twice, once on the sponsor's basis and once on a risk adjusted basis in which a share of the benefit fails to arrive and the one time cost runs over. Exhibit 11 states the assumptions. Taxes were omitted for simplicity and belong to a review with qualified advisers.

Exhibit 11 Assumptions for Build, Buy and Partner, Cresthaven Packaging Group (millions of dollars, fictional)

Assumption	Build	Buy	Partner
One time cost, Years 0 / 1 / 2	5.0 / 4.5 / 1.0	2.0 / 1.5 / 0.0	3.0 / 1.5 / 0.0
One time cost total	10.5	3.5	4.5
Run cost, Years 1 to 5	0.8, 2.4, 2.5, 2.6, 2.7	Subscription 2.0 rising 7% a year, plus internal support 0.6	2.6 flat: platform 1.6 and managed service 1.0
Run cost total, Years 1 to 5	11.0	14.5	13.0
Benefit ramp, Years 1 to 5 (share of 9.0)	0, 25, 75, 100, 100%	30, 80, 100, 100, 100%	25, 70, 100, 100, 100%
Risk adjusted: share of benefit realized	90%	75%	85%
Risk adjusted: overrun of one time cost	20%	10%	15%
Cost of exit at the end of Year 5, reserved	0.0	2.5	1.5

Fictional company and figures. The risk adjustments are illustrations and are not empirical. The buy option is assumed to fit the process less well, so only 75 percent of the benefit is realized, and it carries the highest exit cost because data and workflows reside with the vendor. The build option realizes the most benefit and takes longest to start.

Exhibit 12 Net Cash Flows by Option, Sponsor Basis and Risk Adjusted (millions of dollars, fictional)

Net cash flow	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total	NPV at 10%
Build, sponsor basis	(5.0)	(5.3)	(1.1)	4.2	6.4	6.3	5.5	0.7
Build, risk adjusted	(6.0)	(6.2)	(1.6)	3.6	5.5	5.4	0.7	(3.1)
Buy, sponsor basis	(2.0)	(1.4)	4.5	6.1	5.9	5.8	18.9	12.7
Buy, risk adjusted	(2.2)	(2.2)	2.7	3.9	3.7	3.5	9.3	5.6
Partner, sponsor basis	(3.0)	(1.9)	3.7	6.4	6.4	6.4	18.1	11.5
Partner, risk adjusted	(3.4)	(2.4)	2.8	5.0	5.0	5.0	12.0	7.0

Fictional. Computed in Python. Example, Buy in Year 2 on the sponsor basis: benefit 9.0 x 80 percent = 7.20, less run cost 2.74, giving 4.46. Risk adjusted: benefit 7.20 x 75 percent = 5.40, less 2.74, giving 2.66. Build in Year 0, risk adjusted: one time cost of 5.0 increased

by 20 percent is 6.00, giving (6.00).

Exhibit 13 Results: Five Year Total Cost of Ownership, NPV and Payback by Option (millions of dollars, fictional)

Measure	Build	Buy	Partner
Five year cost of ownership, undiscounted (one time plus run)	21.5	18.0	17.5
Present value of costs at 10 percent	18.0	14.2	14.2
NPV, sponsor basis	0.7	12.7	11.5
Payback, sponsor basis (years from first outlay)	4.1	1.8	2.2
NPV, risk adjusted	(3.1)	5.6	7.0
Payback, risk adjusted (years)	4.9	2.5	2.6
Present value of reserved exit cost	0.0	1.6	0.9
NPV, risk adjusted and after exit cost	(3.1)	4.0	6.1
Rank on the sponsor basis	3	1	2
Rank after risk adjustment and exit cost	3	2	1

Fictional. Computed in Python. Five year cost of ownership: Build 10.5 + 11.0 = 21.5; Buy 3.5 + 14.5 = 18.0; Partner 4.5 + 13.0 = 17.5. The exit cost is discounted five years at 10 percent: 2.5 / 1.61051 = 1.55 for Buy and 1.5 / 1.61051 = 0.93 for Partner. Payback is measured in years from the first outlay on undiscounted cumulative cash flow.

Reading the results. On the sponsor's basis the packaged product wins, with a net present value of 12.7 million dollars against 11.5 for the partner and 0.7 for building, and it pays back in 1.8 years. That ordering is the one that a vendor presentation would produce. When the benefit is reduced for imperfect fit, the one time cost is increased for overrun, and the cost of leaving is reserved, the ordering changes. The partner then leads at 6.1 million dollars, the packaged product falls to 4.0, and building is negative at (3.1) because it spends the most and starts to earn last. Building would look better with a longer horizon, since its run cost is lowest and its benefit is the most complete, and the CFO should say so plainly, because a five year window favors the options that start earning sooner. The lesson does not depend on these particular numbers. It is that the option with the highest headline return is often the option with the most assumptions hidden in it, and the three cheapest questions a CFO can ask are what the fit is, what the price will be in the fifth year and what it would cost to leave.

The price escalator. The packaged product's subscription of 2.0 million dollars rises 7 percent a year in the base assumption. Exhibit 14 varies the escalator while keeping everything else unchanged. The partner's price was assumed fixed by the contract at 2.6 million dollars a year, and that assumption is itself a negotiated term. A partner contract without a cap would behave like the packaged product.

Exhibit 14 Sensitivity of the Packaged Product to the Price Escalator (millions of dollars, fictional)

Annual escalator on the subscription	Run cost, five years	NPV, sponsor basis	NPV, risk adjusted	NPV, risk adjusted and after exit cost
3 percent	13.6	13.3	6.2	4.6
7 percent	14.5	12.7	5.6	4.0
12 percent	15.7	11.8	4.8	3.2

Annual escalator on the subscription	Run cost, five years	NPV, sponsor basis	NPV, risk adjusted	NPV, risk adjusted and after exit cost
Partner, fixed price (for comparison)	**13.0**	**11.5**	**7.0**	**6.1**

Fictional. Computed in Python by re-running the Buy option with subscription 2.0 x (1 + escalator)^(t - 1) plus 0.6 of internal support. The 7 percent row reproduces the Buy results in the preceding exhibits. Moving the escalator from 3 percent to 12 percent lowers every net present value by about 1.42 million dollars, and the packaged product trails the partner in every row after exit cost.

Step six: value the staged investment as a real option. Consider a transform investment that would cost 12.0 million dollars if committed at once. If it works, which the company believes has a one in two chance, its benefits have a present value of 20.0 million dollars, and if it works only modestly the present value is 8.0 million dollars. Committed at once, the expected net present value is 0.5 x 20.0 + 0.5 x 8.0 less 12.0, or 2.00 million dollars. Suppose instead that the company spends 2.0 million dollars on a pilot that reveals which case holds, and proceeds with the remaining 10.0 million dollars one year later only if the result is good. The expected value is then 3.45 million dollars, computed as the pilot cost of 2.0 deducted from half of the 20.0 million benefit less the 10.0 million discounted one year at 10 percent. The difference of 1.45 million dollars is the value of the option to wait and learn. Exhibit 15 sets the two paths side by side.

Exhibit 15 A Staged Investment Valued as a Real Option (fictional)

Item (millions of dollars)	Commit all now	Stage with a pilot
Spending at the start	12.0	2.0
Spending after the pilot, present value	0.0	9.09 in the good case only
Benefit if the investment works (probability 50 percent)	20.0	20.0
Benefit if it works only modestly (probability 50 percent)	8.0	0.0, the program stops after the pilot
Expected net present value	**2.00**	**3.45**
Value of the option to stage		1.45

Fictional. Computed in Python. Commit now: 0.5 x 20.0 + 0.5 x 8.0 - 12.0 = 2.00. Staged: -2.0 + 0.5 x (20.0 - 10.0 / 1.10) = -2.0 + 0.5 x 10.91 = 3.45. The probabilities are the author's illustration. The pilot is assumed to reveal the case with certainty and its cost is assumed not to improve the benefit, so a real pilot would be less decisive than this example.

Why the option has value. The staged path gives up nothing in the good case except the cost of waiting a year, and it avoids spending 10.0 million dollars in the case where the benefit is modest. The CFO should therefore ask of every large transform proposal what the first stage will teach, how soon, and at what cost, and should resist a proposal in which the first stage teaches nothing that could change the decision. The method has limits. It requires an honest estimate of the probability of success, a pilot that truly reveals the answer, and a company willing to stop. Module 5 develops real options within the capital allocation framework.

Step seven: understand the accounting at a high level. The accounting for technology costs decides how much of the spending reaches the income statement at once and how much is spread over later years, and it therefore affects reported earnings without affecting cash. The rules are technical and are changing, and this section provides orientation only. The FASB issued Accounting Standards Update 2025-06, *Targeted Improvements to the Accounting for Internal-Use Software*, on September 18, 2025, as Deloitte reports. The update removes the references to development stages in the guidance on internal use software, so that capitalization begins when management with the relevant authority has authorized and committed to fund the project and it is probable that the project will be completed and the software used as intended. The update

adds that the probable to complete threshold is not met while significant development uncertainty exists, for example when the software has novel or unproven features not yet resolved through coding and testing, or when significant performance requirements are not identified or continue to be substantially revised. It is effective for annual periods beginning after December 15, 2027, with early adoption permitted. EisnerAmper observes that probable generally means about 75 percent or higher, that training, data conversion and general overhead remain expensed, and that companies will likely need new evidence such as approval memoranda and feasibility analyses, while KPMG notes that the Board left unchanged the presentation of capitalized cloud implementation costs as operating cash outflows. In practice, subscription fees for software delivered over the internet are generally expensed over the term, and certain implementation costs of such an arrangement may be capitalized and amortized, which is the subject of earlier guidance, ASU 2018-15, that KPMG identifies as governing implementation costs of cloud computing arrangements. Exhibit 16 illustrates how the 3.5 million dollar implementation of the packaged product might be classified. The classification is hypothetical, and the treatment of each cost depends on the facts and on the judgment of qualified accountants and the external auditor. Module 12 of the CFO Technical Accounting MasterClass covers the standards in depth.

Exhibit 16 Illustration: Capitalizing and Expensing Implementation Costs (fictional)

Implementation cost of the packaged product (millions of dollars, fictional)	Amount	Illustrative treatment (to be confirmed by accountants)
Configuration and integration coding	1.4	Capitalize if the criteria are met
Data conversion and migration	0.6	Expense as incurred
Training of staff	0.3	Expense as incurred
Process redesign and project management of the change	0.5	Generally expense, subject to review
Testing of the configured software	0.5	Capitalize if the criteria are met
Overhead and general administration	0.2	Expense as incurred
Total implementation cost	**3.5**	
Capitalized if criteria are met	1.9	Amortized over an assumed five year term: 0.38 a year
Expensed as incurred	1.6	Reduces reported earnings in the year incurred, with no difference to cash

Fictional and hypothetical. Computed in Python: 1.4 + 0.6 + 0.3 + 0.5 + 0.5 + 0.2 = 3.5; capitalized 1.4 + 0.5 = 1.9; expensed 1.6; amortization 1.9 / 5 = 0.38. The classification is an illustration and not accounting advice. Statements about ASU 2025-06 are from Deloitte, KPMG, Grant Thornton and EisnerAmper summaries, and the standard itself was not opened.

What the accounting does and does not change. A capitalized cost does not make the investment better, and an expensed cost does not make it worse. The accounting changes the pattern of reported profit and, through ratios such as earnings before interest, taxes, depreciation and amortization, may change how the investment appears to lenders and investors. The CFO should therefore decide on the economics first, ask the accounting team to estimate the earnings effect second, and take care that no one designs a project, a contract or a payment schedule in order to obtain a particular accounting result. Tax treatment is a separate matter, and qualified tax advisers should be consulted, particularly where costs are incurred across several countries (Module 18).

Step eight: track the benefits and review the result. A business case that is approved and never measured teaches the company nothing. The CFO should require that each approved investment carry a benefit register with a baseline, a target for each gate, a named owner, and a source system, and that a **post implementation**

review, a structured look back by someone independent of the project, take place at stated intervals after go live. Deloitte's March 2026 CFO Insights reports that only 17 percent of finance leaders say their AI investments have delivered clear, measurable value, which suggests how rarely the register is kept. Exhibit 17 gives a register for the partner option, with the Year 2 targets taken from the risk adjusted case, 9.0 x 70 percent x 85 percent = 5.4 million dollars after rounding.

Exhibit 17 Benefit Register and Review Plan for the Partner Option (fictional, millions of dollars)

Benefit line	Baseline and definition	Target at Year 1	Target at Year 2	Owner and evidence
Avoided labor and outside cost (4.2 at full run rate)	Hours and contractor spend in order to cash, counted only if payroll, hiring or contractor spend fell	0.9	2.5	Controller, payroll and procurement records
Recovered billing leakage (3.0)	Credits, unbilled items and pricing errors found and corrected, in dollars	0.6	1.8	Revenue operations, credit memo records
Avoided legacy maintenance (1.8)	Licence and support invoices for the retired order system	0.4	1.1	Technology finance, vendor invoices and shutdown dates
Total benefit (9.0 at full run rate)	**Sum of the three lines, risk adjusted at 85 percent realization**	**1.9**	**5.4**	**CFO, reported to the technology investment committee**
Adoption	Share of orders processed on the platform	25 percent	70 percent	Process owner, workflow log
Cost against plan	One time spend to date and run cost against the stage budget	Within 10 percent	Within 10 percent	Program office, project accounting
Post implementation reviews	Independent review of results against the business case	Six months after go live	Eighteen months after go live	Internal audit or a named independent reviewer

Fictional. Computed in Python. Year 1 risk adjusted: 9.0 x 25 percent x 85 percent = 1.91, made up of 0.9, 0.6 and 0.4 after rounding. Year 2: 2.5 + 1.8 + 1.1 = 5.4 after rounding, from 5.355 unrounded. Percentages for adoption are the benefit ramp of the partner option.

Step nine: govern the portfolio. A company that evaluates each project well and the portfolio badly will still waste money, because projects compete for the same engineers, the same data and the same attention. A **technology investment committee** chaired by the CFO or the chief executive, with the chief information officer, the chief information security officer, the business sponsors and a representative of internal audit, reviews every request above a stated size, for example 1.0 million dollars, and sends the largest to the board. The committee applies a common template, a common discount rate drawn from the capital allocation process of Module 5, and a common set of **stage gates**, which are decision points at which a project must show specified evidence before the next tranche of money is released. It also sets in advance the **kill criteria**, the conditions under which a project will be stopped, since stopping is easy to agree before a project has an owner who is emotionally invested and hard to agree afterward. Exhibit 18 defines five gates.

Exhibit 18 Stage Gates, Evidence and Kill Criteria for Technology Investments

Gate	Decision taken	Evidence required	Example kill criterion
0. Idea screen	Does the idea merit a business case and a small amount of analysis?	One page: problem, class (run, grow, transform), sponsor, rough size	No named business owner, or no link to a priority
1. Business case	Fund the first stage or the pilot	Five year cost of ownership, NPV, risk adjusted NPV, contract terms, accounting view, scorecard	Risk adjusted NPV negative with no staged plan, or scorecard below 55
2. Pilot results	Fund scale up, extend the pilot, or stop	Results on real data at realistic volume, measured error and unit cost, security review	Measured benefit below 50 percent of the case, or cost per unit more than 25 percent above plan
3. Scale release	Release the remaining tranche	Integration tested, owners named for each benefit line, contract signed with agreed terms, exit plan	Vendor refuses data export or a cap on price rises
4. Benefits review	Confirm benefits, retire old systems, learn	Post implementation review at six and eighteen months, benefit register, lessons	Benefits below 70 percent of the risk adjusted target after two review dates

Source: author's framework, proposed for teaching. The thresholds in the last column are illustrations and each company should set its own. Module 9 treats board oversight and Module 15 the leadership of change.

A portfolio view. The committee should see all live projects in one table, classed as run, grow or transform, with the amount approved, the risk adjusted value, the gate reached and the decision. Exhibit 19 shows a fictional portfolio of six projects. The mix of run, grow and transform spending is itself a decision, since a portfolio weighted heavily toward transform projects carries more risk of failure, and one with no transform projects may be starving the company's future.

Exhibit 19 Technology Investment Portfolio Reviewed by the Committee (fictional)

Project (fictional)	Class	Approved spend (millions)	Risk adjusted NPV (millions)	Gate	Decision and reason
Order to cash platform	Grow	3.5	6.1	Gate 2	Continue to pilot
Data warehouse consolidation	Run	4.2	2.4	Gate 3	Continue
Security segmentation and backup	Run	3.6	0.9	Gate 3	Continue, mandatory risk work
Pricing engine with AI	Transform	6.8	1.1	Gate 1	Hold, evidence of data readiness missing
Customer portal redesign	Grow	2.9	(0.7)	Gate 3	Stop under kill criteria
Warehouse robotics pilot	Transform	2.4	0.3	Gate 2	Continue, one more gate
Portfolio total		**23.4**	**10.1**		**Run 33 percent, grow 27 percent, transform 39 percent of spend**

Fictional. Computed in Python: spend 3.5 + 4.2 + 3.6 + 6.8 + 2.9 + 2.4 = 23.4; NPV 6.1 + 2.4 + 0.9 + 1.1 - 0.7 + 0.3 = 10.1; run 4.2 + 3.6 = 7.8, grow 3.5 + 2.9 = 6.4, transform 6.8 + 2.4 = 9.2. The customer portal project is stopped because its risk adjusted value is negative and no stage plan could change that.

Links to capital allocation and risk. Technology projects compete with every other use of capital, and they should be judged against the same hurdle rate and the same measure of economic profit that Module 5 describes, and not against a special and softer test. Where the project reduces a risk, as in the security example, the tools of Module 10 determine whether the residual risk lies within the appetite set by the board. The CFO should be wary of the argument that a project is strategic and therefore exempt from the discipline. A project may be strategic, and the strategic case is then a reason to state clearly what the company will learn and what it will stop doing if the learning is poor.

4. Executive case study and decisions

Fictional case: the discount that expires on Friday. Ashbourne Logistics Corporation (fictional) has revenue of 1.5 billion dollars and is moving its core applications from its own data centers to a public cloud over five years. The cloud provider has offered a five year enterprise commitment of 3.5 million dollars a year, 17.5 million in all, in return for a discount of 30 percent from list prices, and the offer expires at the end of the week. The chief information officer has also negotiated, with a separate AI vendor, a four year agreement for a document processing platform at 2.4 million dollars a year, with a price rise of 9 percent a year and no right to export the company's data on termination, and wishes both agreements signed together to qualify for a joint credit. The chief executive has asked the CFO for a recommendation.

The facts. The migration plan forecasts consumption at list prices of 2.0, 4.0, 5.5, 6.0 and 6.0 million dollars in the five years, a total of 23.5 million. The first year is light because most applications will not yet have moved. The CFO's analysts consider it likely, at a probability of 60 percent, that the plan will be met, and a 40 percent probability that usage will reach only 70 percent of forecast, because migrations commonly run late and because business volumes may fall. A smaller, ramped commitment of 70 percent of expected consumption in each year is available at a discount of 15 percent. No commitment is also possible, at list price. Exhibit 20 compares the three paths in total payments over five years, undiscounted, in the plan case and in the shortfall case.

Exhibit 20 Ashbourne Logistics: Cloud Commitment Options, Total Payments over Five Years (millions of dollars, fictional)

Option	Terms	Plan case: usage as forecast	Shortfall case: usage at 70 percent	Weighted at 60 / 40
A. Five year flat commitment	3.5 a year, 30 percent discount, shortfall paid each year	19.25	17.50	18.55
B. No commitment	List price, pay as used	23.50	16.45	20.68
C. Ramped commitment	70 percent of expected use in each year, 15 percent discount	19.97	13.98	17.58

Fictional. Computed in Python. Option A pays the greater of 3.5 and the discounted consumption each year: in the plan case 3.5, 3.5, 3.85, 4.2, 4.2 = 19.25. Option B: list 23.5, or 16.45 at 70 percent of usage. Option C: consumption at 85 percent of list 19.975 in the plan case, and 13.98 in the shortfall case, where the commitment of 70 percent of expected use is just met. Undiscounted for clarity; discounting would not change the ranking.

Reading the options. Option A is the cheapest if the plan is met, at 19.25 million dollars, but only by 0.725 million dollars less than Option C, and it is the most expensive in the shortfall case at 17.50 million dollars, because the company would pay for 5.99 million dollars of capacity it did not use, the difference between the 17.50 paid and the 11.51 that its actual consumption would have cost at the discounted rate. Option B is simplest and the dearest in the plan case, at 23.50 million dollars. Option C costs a little more than A if the plan is met and is the cheapest by a clear margin in the shortfall case, at 13.98 million dollars. Weighted by the

analysts' probabilities, Option C costs 17.58 million dollars, Option A 18.55 and Option B 20.68. Option A is cheaper than Option C only if usage reaches at least 91 percent of forecast, which is the number the CFO should put before the chief executive, since the entire saving of the larger discount rests on a migration performing to plan.

The AI contract. The proposed document platform costs 2.4 million dollars in the first year. With a 9 percent annual escalator the four year cost is 10.98 million dollars and the final year payment is 3.11 million. With the escalator capped at 4 percent the cost would be 10.19 million and the final year payment 2.70 million, a difference of 0.78 million dollars over the term. The sum is modest beside the cloud decision, and the lack of a data export right is not modest, since it would leave the company unable to move its processed documents and workflows without rebuilding them. A joint credit that depends on signing both agreements at once is a reason to examine each agreement on its own merits.

The decision point and the recommended path. The CFO should recommend Option C, and should advise the chief executive in four steps. First, sign the ramped commitment and not the flat five year commitment, and ask the provider to confirm in writing that the commitment can be raised, on the same discount schedule, when consumption exceeds plan. Second, treat the Friday deadline as a negotiating position and not as a fact, since offers of this kind are ordinarily renewed when a large customer asks for time, and a one week delay is cheap against a five year obligation. Third, decouple the AI agreement, require a cap on the price escalator, a right to export data, prompts and configurations, notice of model changes and termination assistance at stated rates, and consider a shorter first term with a renewal at a fixed price. Fourth, put in place the governance of Section 3: a FinOps owner for the cloud bill, a unit cost for each product, a quarterly review of utilization against the break even share, and a rule that no further commitment is signed without the committee's review. Contract wording is a matter for counsel, and the CFO should ask legal advisers to confirm each term.

What a weaker answer misses. A weaker answer takes the largest discount because it is the largest, and it treats the deadline as binding. It compares the options in the plan case alone, and it never asks what the company will owe if usage falls. It evaluates the AI vendor on first year price, overlooking the escalator and the loss of data rights, and it accepts the joint credit as a reason to bundle two unrelated decisions. It also leaves the cloud bill without an owner, so that no one notices when utilization drifts below the break even share. The stronger answer is not more cautious than the weaker one. It buys most of the discount, keeps the option to buy more, and keeps the exit open, which costs a little in the plan case and saves a great deal in the case the company is least able to afford.

Questions for reflection. What would the CFO say if the provider refused to ramp the commitment? At what share of forecast usage would you prefer Option A, and what evidence would you require to believe it? If the AI vendor declined a data export right, would you proceed, and with what compensating control? Write your answers before reading the boardroom questions in Section 5.

5. Boardroom discussion and key takeaways

Directors seldom need to understand how a platform is built. They need to know that the person who asks them to commit the company's money has counted the full cost, has tested the benefit against disappointment, has read the contract with the end in mind, and can say when the project will be stopped. Exhibit 21 lists the questions that the board should ask, and the CFO should be ready to answer each from evidence.

Exhibit 21 Ten Questions Directors Should Ask About a Technology Investment

Question a director should ask	What a ready CFO can say
Is this run, grow or transform spending, and how do we judge it?	The class, the test that fits it, and where the project sits in the portfolio
What is the five year total cost, including our own team and the cost of leaving?	One time and recurring cost by year, in a table such as Exhibit 12, with the exit reserve stated
What happens to the case if benefits are 25 percent lower and costs 15 percent higher?	The risk adjusted result, the break even and the gate at which we would stop
Are we committing to a quantity or a dollar amount, and what do we owe if usage falls?	The break even utilization, the commitment as a share of minimum observed usage, and the plan case and shortfall case payments
How does the unit cost of cloud and software move, product by product?	The unit cost trend by product and the owner of each
How does this security spending reduce expected loss, and what is the range?	A loss estimate shown as a range, the break even reduction, and the link to the risk appetite (Module 10)
What can the vendor do to our price, our data and our options?	The escalator cap, data rights, notice of model changes, export and termination assistance, reviewed by counsel
How will the costs be treated in the accounts, and has the auditor been consulted?	A high level view of capitalized and expensed costs, with the accounting and audit teams having confirmed it (Module 11)
Who owns each benefit, and when do we look back?	A benefit register with named owners and review dates at six and eighteen months
Which projects would we stop today, and under what rule?	The kill criteria agreed in advance and the portfolio table showing what was stopped

Source: author's synthesis. The cross references are to modules in this program: Module 10 for risk and cybersecurity, Module 11 for reporting and assurance.

Advising the CEO and the Board on digital economics. The CFO should explain three things. The first is the shape of the cost: how much of technology spending is fixed, how much varies with usage, and how quickly the variable portion could grow if the company succeeds. The second is the discipline of choice: what the company will build because it is a source of advantage, what it will buy because rivals can buy the same, and what it will leave alone. The third is the commitment of the company to its vendors, expressed as a total of contractual obligations by year, the share that is escalating automatically and the cost of leaving each major supplier. Deloitte's Tech Trends guide suggests that CFOs partner with chief information officers, embed finance earlier in technology workflows and reskill teams, advice that is easy to accept and demanding to carry out. A CFO who presents technology as a portfolio with a cost, a return, a risk and an exit for each large item gives the board what it needs, and the company a defense against the loudest request.

Common errors in judging technology investments. Seven errors recur. The first is to compare the cost of building with the first year price of buying, and to ignore the team that must be retained afterward. The second is to commit to cloud capacity for the peak and not for the steady load. The third is to read the total cloud bill and not the unit cost. The fourth is to approve security spending as a percentage of the budget and not as a reduction of a stated loss. The fifth is to accept a price escalator or a renewal clause as boilerplate. The sixth is to report benefits as hours and not as dollars, as Module 1 cautioned. The seventh is to approve and forget, so that no one reviews the result and the next request is judged on enthusiasm. Each of these errors is cheaper to prevent in the proposal than to repair in the ledger.

Key takeaways. First, classify the request as run, grow or transform, since the right test differs for each. Second, a commitment converts a variable cost into a fixed one and moves the risk of low usage to the company, so it should cover the load that is certain and not the peak. Third, manage cloud cost as a unit cost, product by product, because a falling total can conceal a worsening line. Fourth, size security spending as a range of expected loss reduced and compare it with the cost, with the break even reduction as the number to defend. Fifth, the option with the best headline return is often the option with the most hidden assumptions, so risk adjust the benefit and cost and reserve the cost of leaving. Sixth, price escalators, data rights and exit terms are financial terms and belong in the business case. Seventh, a staged program has option value that a single commitment lacks. Eighth, the accounting follows the economics and does not replace them, and qualified accountants should decide the treatment. Ninth, track the benefits and review the results, and agree the kill criteria before the money is spent.

6. The executive artifact: a business case template and a stage gate scorecard

The first artifact is a business case template that the sponsor completes and the CFO reviews at Gate 1. Exhibit 22 shows the template completed for the Cresthaven order to cash decision, using the partner option recommended in Section 3. Each row is a field that must be filled in before the committee meets, and an empty field is itself a finding. The reader should complete a blank copy for a real proposal, replacing every entry with the company's own facts, and should have the contract terms reviewed by counsel and the accounting treatment confirmed by qualified accountants.

Exhibit 22 Technology Investment Business Case Template, Completed for the Fictional Order to Cash Decision

Field	Entry for the Cresthaven order to cash platform (fictional)
Decision requested	Release stage 1 of the partner option, 3.0 million dollars in Year 0, and defer the remaining 1.5 million dollars to Gate 3
Class and sponsor	Grow. Executive sponsor: chief operating officer. Finance owner: controller
Problem and baseline	Order to cash is slow and leaks revenue. Baseline measured over two quarters: labor and outside cost, billing leakage and legacy maintenance
Options considered	Build, buy and partner, as in Exhibit 11. Do nothing is shown as the continuing cost of the legacy system in Exhibit 10
Five year cost of ownership	Partner 17.5 million dollars, against 18.0 for buy and 21.5 for build
Net present value at 10 percent	Sponsor basis 11.5. Risk adjusted 7.0. After exit reserve 6.1. Payback 2.6 years risk adjusted
Key assumptions and sensitivities	Benefit 9.0 at full run rate, 85 percent realized, one time cost 15 percent over. Fixed price of 2.6 a year is a negotiated term
Benefit register	Three lines with owners and Year 1 and Year 2 targets, as in Exhibit 17. Reviews at six and eighteen months
Contract terms sought	Price fixed or capped, data rights retained by the company, export of data and configurations, notice of product changes, termination assistance (Exhibit 5)
Security, privacy and AI governance	Review by the chief information security officer before Gate 2. Data handling reviewed by counsel (Module 10)
Accounting and tax view	Implementation costs classified as in Exhibit 16, subject to confirmation by accountants and the auditor. Tax review by advisers
Stage gates and kill criteria	Gate 2 after the pilot. Stop if measured benefit is below 50 percent of the case or unit cost exceeds plan by more than 25 percent

Field	Entry for the Cresthaven order to cash platform (fictional)
Approvals	Technology investment committee, then the board for amounts above the stated threshold

Fictional. The figures are those of the exhibits in Section 3. The template is a proposed program standard, and each company should adjust the fields to its own process and delegation of authority.

The stage gate scorecard. The second artifact converts the evidence into a score at each gate. Each of eight criteria is rated from 0 to 5, where 0 means no evidence and 5 means strong evidence that an independent reviewer has inspected, and the weighted points equal the weight multiplied by the rating and divided by 5. The weights are the author's proposal. The bands are proposed program standards and not empirical benchmarks: 80 points or more supports release of the next tranche, 55 to 79 points supports a conditional release with stated actions, and below 55 points returns the proposal. Exhibit 23 completes the scorecard at Gate 1 for the partner option.

Exhibit 23 Stage Gate Scorecard at Gate 1 for the Fictional Partner Option

Criterion	Weight	Rating (0 to 5)	Points	Evidence at Gate 1
Strategic fit and link to the capital plan	10	4	8.0	Linked to the order to cash priority. Not yet tested against the capital plan hurdle rate of Module 5
Verified benefit with a named owner	20	3	12.0	Three benefit lines with owners named for two. Leakage estimate not yet measured
Five year cost, complete and risk adjusted	15	4	12.0	Five year cost and risk adjusted cost shown. Internal team time estimated and not yet confirmed
Data, integration and architecture readiness	15	3	9.0	Data audit started. Interface to the ledger planned and not tested
Delivery plan, team and vendor capability	10	3	6.0	Partner has two comparable references. Delivery team not yet named
Security, privacy and AI governance	10	3	6.0	Security review scheduled and not complete. Data handling not yet reviewed by counsel
Contract terms, dependence and exit	15	2	6.0	Price fixed in the draft, but data export and termination assistance are not agreed
Measurement plan and kill criteria	5	4	4.0	Benefit register and kill criteria drafted and approved by the sponsor
Total score	**100**		**63.0**	**Conditional release of stage 1, with actions on contract terms, data and security review**

Fictional. Computed in Python: 10 x 4 / 5 = 8.0; 20 x 3 / 5 = 12.0; 15 x 4 / 5 = 12.0; 15 x 3 / 5 = 9.0; 10 x 3 / 5 = 6.0; 10 x 3 / 5 = 6.0; 15 x 2 / 5 = 6.0; 5 x 4 / 5 = 4.0; total 63.0 of 100. Weights and bands are proposed program standards and are not validated benchmarks.

Using the artifacts. The sponsor and an independent reviewer, such as the controller or internal audit, should score the card separately, and any gap of two points or more on a criterion should be discussed before the meeting. The same card should be rescored at each gate, so that the committee can see whether the weakest ratings have improved. At 63 points the partner option earns a conditional release of the first stage and no more. The conditions are the ones the weakest ratings point to: agree data export and termination assistance, complete the security review and the legal review of data handling, name the delivery team and confirm the internal time. Over several proposals the committee will learn which criteria predicted trouble, and the weights can then be adjusted on evidence and not on opinion.

7. Research and Perspectives from the Leading Firms

The publications below were found by search and each was opened before it was described. Where a page returned only part of its content, the description states only what was returned. The FASB standard itself was not opened, so its provisions are reported as the four firms summarized them, and the FinOps Foundation report is cited only as covered by a trade publication. Practice and rules in this field change quickly, and the reader should confirm the current text before relying on any item.

Exhibit 24 Publications of the Leading Firms and Standard Setters

Source	Title and URL	What it says
Deloitte	FASB Amends Guidance on the Accounting for and Disclosure of Software Costs, Heads Up (2025). https://dart.deloitte.com/USDART/home/publications/deloitte/heads-up/2025/fasb-asu-amends-software-costs-guidance	Reports that ASU 2025-06 was issued on September 18, 2025, removes references to development stages, begins capitalization when funding is committed and completion is probable, defines significant development uncertainty, and is effective for annual periods beginning after December 15, 2027
KPMG	Accounting for internal-use software costs, Defining Issues (September 19, 2025). https://kpmg.com/kpmg-us/content/dam/kpmg/frv/pdf/2025/fasb-asu-software-cost-accounting.pdf	Explains the same changes, notes that judgment shifts to the probable to complete threshold for agile projects, and that the Board kept the presentation of capitalized cloud implementation costs as operating cash outflows
Grant Thornton	Improvements to accounting for internal-use software (December 15, 2025). https://www.grantthornton.com/insights/articles/audit/2025/snapshot/december/improvements-to-accounting-for-internal-use-software	Summarizes the amendments, notes the origin of the old guidance in 1998 and the effect of agile development, and states the effective dates and transition options
EisnerAmper	Modernized Accounting Guidance for Internal-Use Software Costs (October 24, 2025). https://www.eisneramper.com/insights/pcs/internal-use-software-costs-accounting-guidance-1025/	States that probable generally means about 75 percent or higher, that training, data conversion and overhead stay expensed, and that companies will need new evidence of when the criteria are met
Deloitte	The CFO Guide to Tech Trends 2026: How AI can help create value for the finance function (March 24, 2026). https://www.deloitte.com/us/en/what-we-do/capabilities/finance-transformation/articles/cfo-guide-to-tech-trends.html	Says inference usage has grown faster than cost reductions, that human labor is sometimes more cost effective than agents, and that CFOs should track token use and partner with CIOs and CISOs
Deloitte	As AI enters a new phase, CFOs gather useful intelligence, CFO Insights (March 19, 2026). https://www.deloitte.com/content/dam/assets-zone3/us/en/docs/programs/2026/us-cfo-insights-ai-cost-risk-roi.pdf	Reports that AI is expected to rise from 8 to 13 percent of technology budgets over two years, that usage pricing is harder to forecast, and that only 17 percent of finance leaders report clear measurable value from AI
PwC	AI emerges as the top cybersecurity investment, press release on the 2026 Global Digital Trust Insights survey (October 1, 2025). https://pwc.com/gx/en/news-room/press-releases/2025/pwc-digital-trust-insights.html	Survey of 3,887 executives in 72 countries and territories. 78 percent expect cyber budgets to grow, AI ranks first among budget priorities at 36 percent, and only 6 percent feel very capable across all areas

Source	Title and URL	What it says
FinOps Foundation, as reported by SD Times	Report: FinOps priorities are shifting left and expanding (February 19, 2026). https://sdtimes.com/softwaredev/report-finops-priorities-are-shifting-left-and-expanding/	Covers the 2026 State of FinOps report of over 1,100 practitioners: 98 percent manage AI spend, up from 31 percent two years ago, and 90 percent manage software subscriptions, up from 65 percent

Each page was opened and the descriptions follow what the tool returned. No EY, BDO, RSM US, Baker Tilly, Crowe, Forvis Mazars, CBIZ, Moss Adams, CohnReznick or CLA publication was read for this module and none is cited. The NIST and SEC pages were requested and could not be opened, so no statement in this module relies on them. Survey statistics are self reported and describe perceptions and not audited outcomes.

What the research agrees on. The sources differ in kind, from accounting firm summaries of a standard to surveys of finance leaders and executives, and they should not be read as a single body of evidence. They agree on three points. Technology spending, and AI spending in particular, is rising and is increasingly priced by usage. The practice of managing that spending has moved from the cloud bill toward the value of technology as a whole. And the accounting for software is becoming simpler to apply to agile work but shifts judgment to the question of when completion becomes probable, so that evidence of that moment should be kept. The most useful single observation for the CFO is the one that appears in the Deloitte note, that few finance leaders yet report clear and measurable value, which is an argument for the benefit register and the post implementation review.

8. The ten question self assessment

Rate each statement from 1 to 5 using the scale below, and mark one box in each row. The ratings must rest on actual experience or documented evidence, such as an investment you evaluated, a contract you negotiated or a post implementation review you ran, and not on confidence. A rating of 1 means Unprepared: limited understanding and no meaningful application. A rating of 2 means Developing: conceptual familiarity, relying heavily on others. A rating of 3 means Competent: able to apply the capability independently in conventional situations. A rating of 4 means Advanced: the capability is integrated into strategy and delivers measurable results. A rating of 5 means Future-ready: enterprise wide impact, anticipation of change and the development of others.

No.	Statement of demonstrated capability	1	2	3	4	5
1	I can classify a technology request as run, grow, transform or mandatory risk, and apply the test that fits.	☐	☐	☐	☐	☐
2	I can explain consumption pricing and reserved commitments, and compute the utilization at which a commitment pays.	☐	☐	☐	☐	☐
3	I track cloud and software cost as a unit cost by product, and I have an owner for each major cost.	☐	☐	☐	☐	☐
4	I can size and justify security spending with a range based loss estimate and link it to risk appetite.	☐	☐	☐	☐	☐
5	I can judge build versus buy, subscription sprawl, technical debt and platform consolidation in financial terms.	☐	☐	☐	☐	☐

No.	Statement of demonstrated capability	1	2	3	4	5
6	I can evaluate an AI vendor proposal for implementation cost, recurring expense, dependence and exit cost.	☐	☐	☐	☐	☐
7	I can specify contract terms on price escalators, data rights, model changes and termination assistance, with counsel.	☐	☐	☐	☐	☐
8	I can compute NPV, payback, five year cost of ownership and risk adjusted value, and compare build, buy and partner.	☐	☐	☐	☐	☐
9	I can describe at a high level how software and cloud implementation costs are capitalized or expensed, and when to involve accountants.	☐	☐	☐	☐	☐
10	I run benefit tracking, post implementation reviews and a portfolio with stage gates and kill criteria.	☐	☐	☐	☐	☐

Total score: _____ out of 50. Ten statements rated from 1 to 5 give a minimum of 10 and a maximum of 50 points. Exhibit 25 gives the proposed interpretation. The scale is that of the source proposal for this program, and the statements are specific to this module.

Exhibit 25 Proposed Interpretation of the Module 4 Score

Score	Reading	Suggested use
10 to 19	Unprepared	Study the module in full, and shadow a colleague who reviews technology business cases
20 to 29	Developing	Complete the six worked examples with your own figures, and have an experienced peer review the result
30 to 39	Competent	Lead a business case review and a post implementation review, and present the results to the committee
40 to 45	Advanced	Establish the committee, the gates and the benefit register, and teach others to use them
46 to 50	Future-ready	Share the method across the enterprise and invite independent review of the portfolio

These bands are proposed program standards and have not been empirically validated against a broad population of finance executives. Module 4 is not designated a critical module, which in this program are Modules 1, 5, 9, 10 and 13.

Development actions by pattern. A single total can hide the pattern behind it, so look at which statements received the lowest ratings. Exhibit 26 suggests three actions for each pattern.

Exhibit 26 Development Actions for Low Score Patterns

Low scores on	Pattern	Three suggested development actions
Statements 1, 2 and 3	Run cost gap: the reader cannot yet manage cloud and software cost as a unit cost	1. Compute the break even utilization of every cloud commitment. 2. Build a unit cost report for one product. 3. Name an owner for each of the five largest technology costs
Statements 4 and 5	Risk and architecture gap: the reader cannot yet size security or judge architecture financially	1. Draft a loss estimate with a low, base and high range for one threat. 2. Inventory subscriptions with seats bought and seats used. 3. Estimate the yearly interest on one legacy system

Low scores on	Pattern	Three suggested development actions
Statements 6 and 7	Vendor gap: the reader cannot yet assess an AI proposal or its contract	1. Rewrite a recent vendor quote as a five year cost. 2. List the escalator, data rights and exit terms of your three largest contracts. 3. Ask counsel to review one contract against Exhibit 5
Statements 8, 9 and 10	Evaluation and governance gap: the reader cannot yet run the investment process	1. Rebuild Exhibit 12 in a spreadsheet and change each assumption. 2. Meet the controller to classify the costs of one project. 3. Draft a benefit register and kill criteria for one live project

Source: author's suggestions. The mapping of statements to patterns is the author's proposal, and ratings should rest on experience or documented evidence.

A closing thought. The history of corporate technology is a long record of large promises and uneven results, and the companies that gained most were seldom the ones that spent first. They were the ones that knew what a system would cost to own, that bought flexibility where the future was unclear, that read the contract before the demonstration, and that looked back honestly at the result. The CFO who brings that habit to cloud, security, software and AI will not need to forecast the technology. A sound business case, a fair contract, a short list of measures and the willingness to stop will carry the company through changes that no one can foresee, and these are within the CFO's own power to provide.

9. Currency check and sources

Currency check: this field changes quickly, and prices, products, accounting guidance and survey results shown here may already have changed. The publications in Exhibit 24 were opened in October 2026, and their statistics describe the perceptions of respondents and are largely self reported. The following were confirmed on pages read: the issue date of September 18, 2025, the removal of development stages, the capitalization criteria, the significant development uncertainty factors, the effective date and the early adoption right of ASU 2025-06 (Deloitte, KPMG, Grant Thornton and EisnerAmper, as summaries and not the standard itself); the 75 percent reading of probable and the items that stay expensed (EisnerAmper); the presentation of capitalized cloud implementation costs and the reference to ASU 2018-15 (KPMG); the Deloitte statistics on AI budget share, inference costs, 17 percent measurable value and the observations on inference growth and agents; the PwC survey statistics; and the FinOps statistics as reported by SD Times. The following come from the author's own knowledge and were not confirmed in a source read: the descriptions of on demand, reserved, committed and spot pricing and their general features; the break even formulas; the annualized loss expectancy method; the real option calculation; the general statement that subscription fees are expensed and some implementation costs of hosting arrangements may be capitalized and amortized; the contract terms list; and the description of FinOps practice beyond the SD Times report. NIST and SEC pages were requested and could not be opened, and nothing in this module relies on them. The companies, prices, discounts, probabilities, scorecard weights and all dollar figures in the exhibits are fictional and were chosen for teaching, and all sums, net present values, paybacks, sensitivities and shares were computed in Python and checked by assertion. This module is educational and is not accounting, tax, legal, securities or investment advice. Readers must consult qualified professionals in accounting, tax, legal and other relevant services, and the external auditor, before acting, and contract terms in particular require advice from counsel. Every price, discount, escalator and cost in the exhibits is an illustration, and a reader who applies the method must replace each with the figure in the actual quotation, contract or ledger, and must state which figures are measured and which are estimated.

Sources: Deloitte, Heads Up on FASB software costs guidance (2025); KPMG, Defining Issues on internal-use software costs (September 19, 2025); Grant Thornton, Improvements to accounting for internal-use software (December 15, 2025); EisnerAmper, Modernized Accounting Guidance for Internal-Use Software Costs (October 24, 2025); Deloitte, The CFO Guide to Tech Trends 2026 (March 24, 2026); Deloitte, CFO Insights, As AI enters a new phase (March 19, 2026); PwC, AI emerges as the top cybersecurity investment (October 1, 2025); SD Times, Report: FinOps priorities are shifting left and expanding (February 19, 2026). URLs appear in Exhibit 24. The five point scale is from the source proposal for this program.