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M&A and Merger Modeling

Deal Structure, Purchase Accounting and Accretion / Dilution Course Book

Six modules, one running case, every figure computed.
AI-assisted. Not investment advice.

MODULE 1

The M&A process and the deal rationale

Objectives

- Explain the strategic reasons for an acquisition and the test that decides whether it creates value for the buyer's shareholders.
- Name the parties to a public deal and what each of them is responsible for.
- Follow the timeline of a public acquisition from the first approach to closing.
- Size cost and revenue synergies, their phasing and the one-off cost of achieving them.
- List what a board of directors looks at before it approves an offer, and set up the running case.

1.1 Why companies buy companies

A company buys another company when it believes the combination is worth more than the two companies apart, by more than the price it pays above the target's market value. That sentence holds the whole course. The value of the combination comes from the target's own cash flows plus the synergies; the price is the target's market value plus a premium. The buyer's shareholders gain only if the synergies, net of the cost of achieving them, exceed the premium.

The strategic reasons are familiar. A buyer adds a product line it would take years to build, enters a market or a region, gains scale in purchasing and manufacturing, buys a technology or a team, or removes a competitor. Each reason should translate into numbers: revenue that would not otherwise exist, costs that disappear, capital that is no longer needed. A reason that cannot be quantified is not a reason to pay a premium.

Build, buy or partner

Before an acquisition, a board asks whether the same result could be reached more cheaply. Building organically costs time and execution risk but no premium. A joint venture or a commercial agreement shares the upside but keeps both companies independent. An acquisition is fastest and gives full control, at the price of a premium paid upfront and integration risk afterwards. When an acquisition fails to create value for the buyer, the cause is most often one of two things: the price was too high or the synergies were overestimated. Those are exactly the two numbers this course teaches you to test.

Strategic buyer and financial buyer

A strategic buyer, such as a company in the same or a neighbouring industry, can pay for synergies because it will capture them. A financial buyer, such as a private equity fund, pays for the standalone cash flows and the debt they can carry, and earns its return from leverage, operational improvement and the exit. That is why strategic buyers can often outbid financial buyers, and why the merger model, built on earnings per share and synergies, is the tool of the strategic buyer, while the leveraged buyout model is the tool of the fund.

In this course the buyer is a strategic one. Varnell Flow Technologies, Inc. (fictional) makes valves, pumps and flow-control systems for process industries. Ornway Sensing Corporation (fictional) makes the sensors, analyzers and monitoring software that measure what flows through those valves. The two sell to the same plants, often to the same engineers: the logic is a broader offer to shared customers and lower combined

costs.

1.2 Who does what in a public deal

A public acquisition involves more parties than a private one, because the target's shareholders are many, its shares trade every day and securities regulators supervise what both companies say.

Party	Role in the deal
Acquirer's board and management	Decide the strategy, approve the offer, the price range and the financing; management runs the process and the integration plan.
Target's board	Has a duty to the target's shareholders: negotiates the price, may run an auction, recommends or rejects the offer. A special committee is used when there are conflicts.
Financial advisors (investment banks)	Value the target, model the deal, negotiate, and usually give a fairness opinion: a letter stating that the price is fair, from a financial point of view, to the shareholders they advise.
Lawyers	Draft the merger agreement, run the regulatory filings, advise the boards on their duties.
Accountants and due diligence teams	Check the quality of earnings, working capital, tax exposures and the accounting for the deal (module 3).
Lenders	Provide committed financing for the cash part of the price, often a bridge loan refinanced later by a term loan or bonds.
Shareholders	Vote on the merger or tender their shares; the acquirer's shareholders may vote when it issues a large number of new shares.
Regulators	Antitrust authorities review competition; securities regulators supervise disclosure; some sectors need further approvals.

Under Delaware law, where many US companies are incorporated, a target board that decides to sell control for cash must seek the best value reasonably available to its shareholders: the duty courts set out in the 1986 Revlon decision. When the consideration is mostly the acquirer's shares, the target's shareholders keep a stake in the combined company and the analysis shifts to the value of that stake. This is one reason the mix of cash and stock (module 5) is negotiated so closely.

The fairness opinion deserves a word of caution. It is based on the advisor's valuation range, often from discounted cash flows, trading comparables and precedent transactions, and it states that the price falls within a fair range. It does not say that the price is the best obtainable, and the advisor is usually paid mostly on completion. Read it as a check, not as proof.

1.3 The timeline from first approach to closing

A public deal follows a recognizable sequence. The order matters to the model because each step fixes some numbers and leaves others open.

Step	What happens	What it fixes in the model
Approach	The acquirer's CEO or advisor contacts the target, often with an indicative price.	A first premium and price range.
Confidentiality and due diligence	A non-disclosure agreement, then access to a data room and management.	Forecasts, synergy estimates, balance sheet details.
Negotiation and agreement	Price, cash and stock mix, exchange ratio, conditions, break fees.	Offer price, consideration, financing structure.
Announcement	Press release, investor presentation, the market reacts.	The undisturbed price becomes history; the acquirer's share price moves.
Approvals	Antitrust filings, shareholder votes or a tender offer, other regulators.	Timing of closing; possible remedies (divestitures).
Closing	Payment, new shares issued, the target becomes a subsidiary.	Acquisition date of the accounting (module 3), the opening balance sheet (module 6).

In the United States the Hart-Scott-Rodino Act (1976) requires a pre-merger filing above a size threshold, followed by a waiting period, normally 30 days, before closing. The Federal Trade Commission's expanded notification form, which took effect on 10 February 2025, was vacated by a federal district court in Texas in February 2026, and filers returned to the earlier form in March 2026 when the appeals court declined to stay that ruling; check which form applies before setting the timetable. A tender offer made directly to shareholders must stay open at least 20 business days under the SEC's tender offer rules; a one-step merger instead goes to a shareholder vote after a proxy statement.

In the case, Varnell announces its offer on 14 Jun 2027. The last closing price before any leak or rumour, on 11 Jun 2027, is the undisturbed price of Ornway: $42.00. The deal closes on 31 Dec 2027, which is also the date of the purchase price allocation and the opening of the pro forma years FY2028E and FY2029E.

Deal protections

The merger agreement usually includes a no-shop clause (the target stops seeking other bids, with a fiduciary exception), matching rights for the buyer, and a break fee paid by the target if it accepts a better offer, typically a few percent of the equity value. A reverse break fee, paid by the buyer, covers the risk that financing or antitrust approval fails. These terms do not enter the earnings model but they change the odds that the model will ever matter.

1.4 Synergies: costs, revenues and the cost of getting them

Synergies are the gains the combined company makes that neither company would make alone. They come in two kinds, and boards treat them very differently.

- Cost synergies: duplicated head offices and listings, overlapping sales forces, combined purchasing, closed plants or warehouses, shared IT. They are largely in management's control and are estimated bottom up, function by function.
- Revenue synergies: cross-selling one company's products to the other's customers, bundled offers, access to new channels or regions. They depend on customers and competitors, take longer and fail more often. Most boards and investors give them little or no weight in the base case.

Three further points matter as much as the run-rate. First, phasing: synergies build up over two or three years as contracts end and teams merge. Second, the one-off cost of achieving them: severance, relocation, systems migration, consultants, often of the order of one year of the run-rate. Third, dis-synergies: customers who leave because they do not want both suppliers from one group, key staff who leave, overlapping products that must be discontinued.

Synergies of the case	FY2028E	FY2029E
Run-rate cost synergies, pre-tax	$90.0m	$90.0m
Share achieved	50%	100%
Cost synergies in the year, pre-tax	$45.0m	$90.0m
Revenue synergies (revenue)	$0.0m	$60.0m
EBITDA from revenue synergies at a 25% margin	$0.0m	$15.0m
One-off integration costs, pre-tax	$70.0m	$20.0m

Varnell's base case counts only the cost synergies: $90.0m a year at run-rate, half of it in FY2028E. The revenue synergies of $120.0m of sales at a 25% margin are shown, and the workbook has a switch to include them, but the base case leaves them out. That is a deliberate choice: an offer that only works with revenue synergies is a weak offer.

1.5 What the board looks at

A board does not approve a deal on one number. It reads a short list of measures, each answering a different question.

Question	Measure	Module
Are we paying a fair price?	Premium, multiples paid against peers and precedents, valuation range	2
Do the synergies pay for the premium?	Value of the synergies net of integration costs against the premium paid	1, 2
What happens to our earnings per share?	Accretion or dilution in years 1 and 2, adjusted and reported	4
How much can we pay?	Breakeven synergies, maximum price at a neutral EPS	5
Who owns the combined company?	Ownership of the target's shareholders against their contribution	5
Can the balance sheet carry it?	Leverage, interest cover, rating, goodwill	6
What if we are wrong?	Sensitivity tables on premium, mix, synergies and price	6

The value of the synergies

A quick way to value synergies, common in board materials, is to capitalize the after-tax run-rate at the acquirer's own P/E: the market would value each dollar of extra earnings at that multiple. Varnell's standalone EPS for FY2028E is $5.25; at a share price of $84.00 its P/E is 16.0x. The run-rate cost synergies after tax are $90.0m x (1 - 25%) = $67.5m. Capitalized at 16.0x they are worth $1,080.0m; less the integration costs after tax of $67.5m, the net value is $1,012.5m. Module 2 compares it with the premium of $680.4m.

A discounted cash flow of the synergies, phased and taxed, with a terminal value, gives a more careful answer and is what advisors present. The P/E shortcut is useful because it uses the same multiple the market applies to the buyer, and because it shows immediately how many years of full synergies the premium represents.

The running case

Item	Running case
Acquirer	Varnell Flow Technologies, Inc. (fictional): FY2028E revenue $6,200m, EBITDA $1,250m, net income $630m, 120.0m shares at $84.00
Target	Ornway Sensing Corporation (fictional): FY2028E revenue $1,500m, EBITDA $330m, net income $175m, 50.0m basic shares at $42.00
Offer	30% premium: $54.60 per share, 50% in Varnell shares and 50% in cash
Financing	$900m of Varnell's cash, a new term loan at 6.0%, new shares
Synergies	$90m run-rate cost synergies, 50% in FY2028E; integration costs $70m and $20m
Timing	Announcement 14 Jun 2027, closing 31 Dec 2027, pro forma years FY2028E and FY2029E

Worked example, step by step

1. Cost synergies in the year: run-rate $90.0m x phasing 50% = $45.0m in FY2028E; x 100% = $90.0m in FY2029E.
2. EBITDA from revenue synergies, if counted: $120.0m x 50% x 25% = $15.0m in FY2029E, zero in FY2028E. The switch is 0 in the base case.
3. Varnell's FY2028E EPS: $630.0m / 120.0m shares = $5.25; P/E = $84.00 / $5.25 = 16.0x.
4. Run-rate synergies after tax: $90.0m x (1 - 25%) = $67.5m.
5. Capitalized value: $67.5m x 16.0x = $1,080.0m.
6. Integration costs after tax: ($70.0m + $20.0m) x (1 - 25%) = $67.5m.
7. Net value of the synergies: $1,080.0m - $67.5m = $1,012.5m.

Pitfalls

- Counting revenue synergies at the same confidence as cost synergies, or worse, putting them in the base case without a separate line and a switch.
- Using the run-rate from year 1: synergies take two or three years to build up, and the integration costs come first.
- Forgetting dis-synergies: lost customers, departing staff, discontinued overlapping products.

- Reading the fairness opinion as proof that the price is right: it is a range, prepared by an advisor usually paid on completion.
- Valuing synergies at the target's multiple or before tax: they are earned by the buyer and taxed like any other profit.

Summary

- An acquisition creates value for the buyer only if the synergies, net of the cost of achieving them, exceed the premium.
- Strategic buyers can pay for synergies; financial buyers pay for standalone cash flows and debt capacity.
- A public deal runs from approach to closing through due diligence, agreement, announcement and approvals; each step fixes some numbers of the model.
- The case: Varnell buys Ornway at a 30% premium; $90m of run-rate cost synergies are worth $1,013m net of integration costs.
- A board reads price, synergies, EPS, ownership, credit and sensitivities, never one number alone.

Build it in Excel

Open the start file of module 1. Inputs are given in blue on yellow on the Inputs sheet. On the Synergies sheet, build the orange cells from the top: each row is one formula, copied across the two years when there are two columns. Files: Step_01_Deal_Rationale_start.xlsx and Step_01_Deal_Rationale_solution.xlsx. In the Case Workbook: Synergies sheet: phasing, revenue synergies with their switch, integration costs, and the value of the synergies at the acquirer's P/E.

In the Exercise Workbook: tab M1 Synergies, a bigger, slower synergy plan.

Practice questions

1.1 Why can a strategic buyer usually outbid a financial buyer?

A. It is not subject to antitrust review

B. It can pay for synergies it will capture

C. It does not pay a premium

D. It never uses debt

1.2 Run-rate cost synergies of $90m pre-tax, 50% achieved in FY2028E. Cost synergies in FY2028E?

A. $67.5m

B. $45.0m

C. $90.0m

D. $33.8m

1.3 Run-rate cost synergies of $90m, tax 25%, capitalized at a P/E of 16.0x. Value?

A. $1,013m

B. $1,103m

C. $1,080m

D. $1,440m