

The comparator sheet

Chapters 2, 7, 8 and 17. Every headline line against every comparator the company holds, on one row. The reader decides which question the quarter is asked.

Company		Prepared by	
Period		Date	

Line	Actual	Budget	Prior year	Latest forecast	Preceding quarter	Plan
Revenue: amount						
Revenue: variance						
Revenue: per cent of base						
Gross profit: amount						
Gross profit: variance						
Gross profit: per cent of base						
EBIT: amount						
EBIT: variance						
EBIT: per cent of base						

Comparator	Belongs to	The question it answers	What it cannot see
Budget	The people who negotiated it	Did we do what we told ourselves	Whether the budget was any good
Prior year, same period	The outside reader	Is the business bigger	Intent: what this year decided
Latest forecast	FP&A	Did we know what was coming	The business: it measures the forecaster
Preceding period	The operator	Is it getting better or worse	The calendar: a direction, not a measurement
Underwriting plan	The owners	Are we worth what was paid	What the budget declined to fund

Item	Done	Evidence / note
Before the variance is quoted		
The comparator is named in the same sentence as the variance, in the commentary, the chart title and the email		
The base of every percentage is stated (the same gap has two percentages: on the forecast and on the actual)		
Two comparators are put before any decision: the two that answer the question actually asked		
Where two comparators disagree in sign, both are reported with what each answers; neither is averaged away		
Gross profit and EBIT have as many comparators as revenue, or the missing ones are listed		

Calderwood, third quarter: 216,340,000 is 3.0190 per cent above budget and 6.9505 per cent below plan; the spread between the best and the worst reading is 10.6610 per cent of revenue.

The four questions and the ten per cent test

Chapter 3. The output of the function is a small number of derived figures somebody uses to decide something. Take the pack, page by page, with a pen.

Company		Prepared by	
Period		Date	

Page or figure	Question it serves (what happened / what will / what would change it / what decision)	Who would act on it	Move it 10%: does a decision change?	Keep, delete, or build

The figure the pack cannot produce (the question asked in the corridor): what it is, the figures it joins, who owns them, and the hours the deleted pages release to build it.

Item	Done	Evidence / note
Decline to produce		
Precision the decision cannot use		
A variance on any line where nobody would act differently		
Commentary that restates the number in words		
An allocated segment profit offered as an input to a decision about that segment		
A page produced because it was produced last month		
A forecast that is also the target somebody is paid against		

Price-volume decomposition

Chapter 4. Four inputs and no others. State the convention on the page, every time, beside the numbers.

Company		Prepared by	
Period		Date	

Input	Budget	Actual	Difference
Units			
Average selling price			
Standard unit cost			
Unit gross profit (price less cost)			
Revenue			
Gross profit			
Gross margin			

Step	Formula	Revenue	Gross profit
Volume effect			
(actual units - budget units) x budget price (or budget unit gross profit)			
Price effect, at actual volume (this book's convention)			
(actual price - budget price) x actual units			
Cross term (shown only if price is taken at budget volume)			
(actual units - budget units) x (actual price - budget price)			
Sum of the steps			
must equal the variance, with nothing left over			

Item	Done	Evidence / note
Before the numbers are read		
Convention printed: price at actual volume, so the interaction sits in price (the concession on the extra units is charged to whoever granted it)		
The same convention as last quarter and as every other analyst		
Cost rate tested: a third step is added only where the standard cost moved, never a step worth zero		
Averages flagged: an average price can hide a uniform concession, a few large ones, or a shift in models		
The narrative says which direction it asserts (the discount won the volume, or not) and on what evidence		

Calderwood: volume 16,560,000 and price -5,520,000 on revenue; volume 5,299,200 and price -5,520,000 on gross profit. The wrong pairing on gross profit reads +499,200: the convention changed the sign.

The gross profit bridge and the margin split

Chapter 5 and Appendix A. Each step a cause with an owner. The profit question and the margin question are answered separately.

Company		Prepared by	
Period		Date	

Step	Amount	Computed from (an input measured independently)	Owner	Could the owner have moved it?
Budget gross profit				
Volume, segment 1				
Volume, segment 2				
Volume, segment 3				
Price and discount				
Cost or rate (only if a rate moved)				
Actual gross profit				
Residual (must be zero)				

Margin	Per cent	How it is computed
Budget margin		
Margin at actual mix, budget prices		
Actual margin		
Mix effect (points)		
Price effect (points)		

Item	Done	Evidence / note
No plugs		
No line called other, mix and timing, or rounding		
Every step derived from units, prices, standard costs or contract counts, never from the total		
Absent steps stated: "the cost rate was unchanged in all segments"		
The bridge stops at gross profit; operating expense is a separate page		
Any step nobody owns gets a second bridge behind it (for example consumables volume: a consequence of the installed base)		

Calderwood: volume 1,919,200, price -5,520,000; margin down 3.0011 points, 1.5733 of mix and 1.4278 of price. Mix survives any pricing decision.

Favourable variance review

Chapter 6. Read the green numbers first. Colour a variance by whether the activity happened, never by the sign.

Company		Prepared by	
Period		Date	

Expense line	Actual less budget	Activity measure (moves when the work moves)	Not spent, or not yet spent?	Did the activity happen?	Would we buy it again at that price?	Colour

The price of a deferral	Value
Underspend reported	
Explained by (count x loaded rate)	
Share of the variance explained	
What the missing activity was producing, a year (the company's own figure)	
Assumed delay (an assumption: say so on the line)	
Margin deferred by that delay	
Ratio to the underspend	
Threshold: delay at which the underspend would have been worth having	

Commentary written to the rule: cause, owner, decision required this month.

Calderwood: 14 roles x 100,000 = 1,400,000, the whole variance. A one-quarter slip of a 74,400,000 platform defers 5,952,000 of gross profit, 4.2514x the saving. The underspend pays only if the slip is under 5.8804 per cent of a year: about three weeks.

The negotiated budget and the plan-to-budget bridge

Chapters 7 and 8. Two board-approved documents for one year. Put both columns on the page and name an owner for every step between them.

Company		Prepared by	
Period		Date	

Quarter	Prior-year actual	Budget	Budget less prior year	Plan	Plan less budget	Actual / reforecast
Q1						
Q2						
Q3						
Q4						
Year						

Plan to budget	Amount	Owner	Retired by, and when
Plan			
Volume the budget does not assume can be placed			
Price or discount the budget concedes			
Scope the plan includes and the budget defers			
Timing: same event, different year			
Budget			
Residual (must be zero)			

Item	Done	Evidence / note
Before a budget variance is read as performance		
Who proposed the number in the second column, and when		
What would have had to be true for it to be right; has anything since contradicted it		
First submissions archived beside approved numbers; each segment's record against its own budgets kept		
Each segment's budget rebuildable from drivers owned outside finance		
If the plan is no longer achievable: a signed, dated note, not silence		

Calderwood: budget 840,000,000 equals last year exactly; plan 930,000,000. Nine months: 6,340,000 ahead of budget, 64,160,000 behind plan. The reforecast year lands 77,660,000 below plan.

The driver tree

Chapter 9. Forecast the things somebody outside finance owns and can move. Every other line is arithmetic on them.

Company		Prepared by	
Period		Date	

Node	Figure	Measured, decided, or consequence?	Owner outside finance	A 10% move: effect on EBIT	Worth measuring monthly?
Installed base, start of year					
Attrition rate					
Units retired in the year					
New units placed					
Net addition					
Installed base, end of year					
Consumables revenue per installed unit					
Service revenue per installed unit					
Representatives					
Quota per representative					
Average price					

Item	Done	Evidence / note
Pruning the tree		
Would a 10% move change the answer by more than the cost of measuring it?		
Does somebody outside finance own it and recognise it as theirs? (Name the person embarrassed if it is wrong.)		
Can it be measured separately? A driver you cannot measure becomes a plug: one honest average beats two invented components		
Rates rounded for print are stated as rounded ("the 80 either way is the rate rounded")		
Where only a mean is available (units per representative), say that the mean is what you have		
Line by line		
Is this a forecast, or arithmetic on another forecast?		
Has the owner of each driver seen the number that depends on it?		
Which decisions are not in the tree (price, discount), each sized in advance?		

Calderwood: 1,920 of 4,800 placements only replace retirements (40 per cent). Ten per cent of the base is 24,184,000 of gross profit, 25.9619 per cent of budget EBIT.

The rolling forecast charter

Chapter 10. A fixed horizon, re-cut on a timetable. It fixes the age of the number and nothing else.

Company		Prepared by	
Period		Date	

Item	Done	Evidence / note
The four rules		
A fixed horizon, re-cut on a published timetable, never trimmed to reach a year end		
Expectation and commitment are separate documents with separate owners: nobody is paid against the forecast		
Fewer lines than the budget, cut where a driver has an owner outside finance		
The forecast's own error is measured, published and carried on the face of the next forecast		
Signs it has become a second budget		
The forecast pack matches the budget pack line for line		
The re-cut takes three weeks of a thirteen-week quarter		
Managers prepare what to say rather than what they think		
Submission rounds, negotiation and formal sign-off have appeared		

Re-cut at close of	Periods covered	Owner of the expectation	Owner of the commitment	Last error (sign, size)	Correction in the number?

The reforecast's largest assumption	Value used	One step either side	EBIT at each
Margin carried forward			
Operating expense (held at budget means an overrun given back: say so)			
Revenue: as submitted and de-biased			

Calderwood: carrying the third quarter's 42.6122 per cent gives EBIT 86,977,755.48; the budget margin gives 94,060,466.67. One judgement about one quarter's margin is worth the whole adverse variance.

The forecast error log

Chapter 11. Error of the forecast made at the start of each period, as submitted, per cent of the actual, positive when the forecast was high.

Company		Prepared by	
Period		Date	

Period	Forecast as submitted	Actual	Error, per cent of actual	Absolute error	Absolute, less the mean

Statistic	Value	Reading
Observations; of which high		
Mean error (the bias)		
Sample standard deviation (the noise)		
Ratio of bias to noise		
Standard error of the mean (SD over root n)		
Mean absolute error, as submitted		
Mean absolute error, after subtracting the mean		
Next forecast: as submitted / corrected / one standard error either side		

Item	Done	Evidence / note
The two responses, in order		
Correct first: publish the corrected number beside the submission, both on the face of the forecast		
Then ask who is paid for the bias, and re-measure the series after the incentive changes		
Convention fixed and written at the top; never changed in a year anyone might compare two tables		

Calderwood: eight observations, mean 1.8568 per cent, standard deviation 2.0273, bias to noise 0.9159x. The fourth quarter of 236,000,000 corrects to 231,697,943.56; one standard error either side gives 233,339,938.69 to 230,078,896.14.

What the budget cycle costs, and what it changed

Chapter 12. Two artefacts before the first submission goes out: the cost on the company's own estimates, and the decisions the last cycle altered.

Company		Prepared by	
Period		Date	

Cost	Estimate	Whose estimate
People who submit or review a budget line		
Working days each, across the cycle		
Fully loaded cost a day		
Cost of the cycle (the three multiplied)		
Weeks from first submission to approval; share of the calendar		
One more submission round (a day of each participant)		

Decision the cycle changed (not recorded: changed)	As submitted	As approved	Who changed it	Needed 118 people and 14 weeks?

Item	Done	Evidence / note
Three savings		
Stop budgeting lines below the level at which anybody would act on a variance: if this line came in 10% adverse, who would do what?		
Set the corporate allocation once and rule it out of order inside the cycle		
Replace the last submission round with a decision meeting		

Calderwood: $118 \times 6.5 \text{ days} \times 620 = 475,540$, 0.5105 per cent of budget EBIT; fourteen weeks are 26.9231 per cent of the calendar. The elapsed time is the larger cost.

The segment page, read backwards

Chapters 13 and 14. Take the allocation out and see what is left. Then ask what would still be there on Monday.

Company		Prepared by	
Period		Date	

Segment	Revenue	Gross profit	Direct expense	Contribution	On own revenue	Allocation, base 1	Allocation, base 2
Total							

Closure test, year by year	Year 1	Year 2	Year 3	Year 4	Year 5
Contribution lost					
Downstream gross profit lost as the base decays					
Corporate cost genuinely avoided (estimate; whose?)					
Change in group EBIT					

Item	Done	Evidence / note
Two tests for every allocated cost		
Would it still be there on Monday if the segment closed?		
Can the manager judged on it move it by doing her job?		
Allocated profit shown only annually, on both bases side by side, or not at all		
What the segment sells that is booked elsewhere		
Downstream contribution per unit IN SERVICE (divide by the installed base, a stock, never by the year's placements, a flow)		
Over how many years: implied life = 1 / attrition; do the units retire like the base?		
Share of the base that could buy the downstream elsewhere: the threshold at which the verdict turns		

Calderwood: instruments contributes 2,312,000; on revenue it "loses" 37,642,285.71, on gross profit 25,717,899.36. Closing it costs 9,659,200 of EBIT in year one; 6,951.67 a year per instrument in service, not 34,758.33.

Operating leverage and the commission plan

Chapters 15 and 16. Two numbers to have in your head before a discount is offered, and what the plan pays for granting it.

Company		Prepared by	
Period		Date	

Leverage card	Value
Degree of operating leverage (gross profit / EBIT)	
Breakeven revenue at the budget margin / at the latest actual margin / at the reforecast margin	
Margin of safety at each	
One point of gross margin, as a per cent of EBIT	
Gross margin at which EBIT is zero; points of margin above it (= EBIT margin)	
If a share of the cost base is variable: breakevens again, and the gap between them	

The plan, on one unit	Revenue plan	Gross profit plan (neutral rate)
Rate		
Paid on a unit at the budget price		
Paid on a unit at the discounted price		
What the representative gives up to grant the discount		
What the company gives up		
Exchange rate between the two		
Uplift per hundred at which the representative gains by discounting		

Item	Done	Evidence / note
Reading the plan before the pack		
The base the sales force is paid on, and what one representative gives up on one discounted unit		
The margin floor, and on what horizon it was set; whether it binds on any real negotiation		
Who approves below the floor, by name		
What administering the floor costs (heads x days x rate)		

Calderwood: leverage 4.1132x; one point of margin is 9.0175 per cent of EBIT; 11.0895 points remove it. A representative gives up 48 to grant a 4,000 discount: 83.3333x. On gross profit at 3.75 per cent: 150, 26.6667x.

The one page that would survive

Chapters 17 and 18. Fourteen lines, each with a comparator and a threshold agreed before the month it governs.

Company		Prepared by	
Period		Date	

Line	Figure	Comparator	Threshold it is judged against
Revenue, quarter			
Gross profit			
Gross margin			
of which mix			
of which price			
EBIT			
Degree of operating leverage			
Gross profit per representative			
Contribution, segment 1			
Contribution, segment 2			
Contribution, segment 3			
Installed base			
Forecast, next quarter (with its measured error)			
Plan-to-budget gap (owner per step)			

Cadence	Contents
Monthly	
Headline lines with every comparator; the bridge with the margin split; the driver lines; expense lines with an activity measure	
Quarterly	
The reforecast and its measured error; segment contribution before allocation	
Annually	
The plan-to-budget bridge with an owner per step; the allocation on both bases	

Commentary rule: every sentence about a variance names the cause, the owner and the decision. Page rule: every page names the decision it informs, or comes out.

Off the page: allocated segment profit, the sequential comparison as a measurement, expense lines coloured by sign, any chart without a comparator, cash (a different discipline, a different page).