Operations, Turnaround and Transformation

Interview preparation summary · SC track

IN THIS SUMMARY

- Operations
- Turnaround and transformation

INT.KO.1.a · Operations

Map a process, find the bottleneck, and use capacity, utilisation, throughput and cycle time to say what limits output and what would raise it.

A bottleneck is the step in a process with the lowest capacity compared with the flow the process must carry, and it sets the output of the whole process: an hour lost there is an hour lost for the system, while an hour gained at any other step mostly turns into idle time. To find it, map the steps in order, write down the capacity of each (units per hour times the hours available, after breaks, changeovers and rework), compare each with demand and take the lowest. Utilisation is actual output divided by capacity, so at the system's output the bottleneck shows close to 100% while the other steps sit lower. Throughput is units completed per period and cycle time is the elapsed time from start to finish; Little's law links them, because work in progress equals throughput times cycle time. Once the constraint is found, ask whether it can run more hours, waste less time, or be given more capacity, then check where the constraint moves next. The usual mistakes are improving a step that merely looks busy, using averages, and forgetting that the bottleneck moves.

WORKED EXAMPLE: FINDING AND RELIEVING THE BOTTLENECK AT MARLOWE PACKAGING

Marlowe Packaging, an invented carton maker, has four steps in sequence: cutting at 120 cartons an hour, printing at 90, folding at 100 and packing at 150. Each runs 8 hours a day, 5 days a week. Customers want 4,000 cartons a week. Contribution is GBP 2.50 a carton. Which step limits output, how short is the plant, and what happens if printing alone is run for 9 hours a day? An extra printing hour costs GBP 60. Ignore breakdowns and scrap.

Answer: Printing is the bottleneck at 3,600 cartons a week against 4,000 wanted. An extra printing hour a day lifts output to 4,000 a week, because folding then becomes the limit, and adds a net GBP 700 a week.

> **Interview tip:** Say it in this order: capacity of each step, the lowest one, the gap to demand, what the fix gains, and where the constraint moves next. The sentence 'and then folding becomes the bottleneck' shows you know that fixing one constraint reveals the next.

INT.KO.1.b · Operations

Analyse inventory and supply chain performance using inventory days, turns, service level and the cost of complexity, and say where stock can be cut without hurting service.

Inventory ties up cash and costs money to hold, so consultants measure it in a way that can be compared. Inventory turns are cost of goods sold divided by average inventory, and days of inventory are 365 divided by turns, which says how long stock sits before it is sold. Carrying cost (capital, storage, obsolescence) is often quoted at something like 15% to 30% of stock value a year. Stock has three jobs: cycle stock to run in batches, safety stock to absorb variability in demand and lead time, and pipeline stock in transit. Safety stock grows with the service level wanted and with the square root of lead time, so shorter lead times and steadier demand cut it faster than tinkering with targets. Complexity adds cost too: every extra product, variant and supplier adds setups, forecasts and write-offs, so a long tail of small items is often worth pruning. Scrap, rework and returns are cost too. The usual mistakes are cutting stock across the board, which lowers service on the items that sell, and treating a stock release as profit when it is a one-off cash gain.

WORKED EXAMPLE: RELEASING CASH FROM STOCK AT KESTREL FOODS

Kestrel Foods, an invented grocery distributor, has annual cost of goods sold of GBP 120.0m and average inventory of GBP 20.0m. Of that stock, GBP 5.0m is safety stock set against a supplier lead time of 16 days. The board wants inventory days down to 50. Carrying cost is 20% a year. How much cash can be released, what is the yearly saving, and how much could a shorter lead time contribute? Use a 365-day year.

Answer: Inventory is 60.8 days. Reaching 50 days releases about GBP 3.6m of cash, once, and saves about GBP 0.7m a year in carrying cost. A shorter supplier lead time could supply roughly GBP 1.25m of the release without lowering service.

Interview tip: Say 'days, then cash, then profit': first the days of stock, then how much cash a lower figure frees, then the small yearly saving. Make clear that cash released is not profit, and name the products where you would protect stock.

INT.KO.1.c · Operations

Compare make and buy on relevant cost and strategic grounds, and explain how utilisation and variability drive queues and waiting time in service operations.

A make-or-buy decision compares what the company would actually save or spend, not the cost reported in the accounts. Relevant cost is what changes with the decision: materials, direct labour and fixed costs that go away if production stops. Overheads allocated from head office usually stay, so counting them makes making look dearer than it is. Then look at volume (a fixed cost that is avoidable favours buying at low volume and making at high volume), one-off transition costs and payback against the contract term, and strategic factors: control of quality and know-how, dependence on one supplier, flexibility, and what the freed capacity or management time could do instead. Service operations add queues. With random arrivals and a single server, the wait before service grows roughly with utilisation divided by one minus utilisation, so it rises slowly at 60% to 70% and explosively above 90%. The levers are less variability (appointments, standard work), pooled or flexible staff, and shorter service times. Mistakes: treating full cost as relevant, and designing for 100% utilisation.

WORKED EXAMPLE: MAKE OR BUY A BRACKET AT TARN COMPONENTS

Tarn Components, an invented engineering firm, makes 50,000 brackets a year. Variable cost is GBP 6.20 a unit. Fixed costs that disappear if production stops (a supervisor and leased tooling) are GBP 180,000 a year. A further GBP 90,000 of head office overhead is allocated to the line and would stay either way. A supplier offers brackets at GBP 9.00 delivered. Should Tarn buy? At what volume would making win? Ignore one-off costs and tax.

Answer: On relevant cost, buying saves about GBP 40,000 a year at 50,000 units, and making wins above about 64,300 units. The headline saving of GBP 2.60 a unit comes from overhead that would not go away.

Interview tip: Say 'relevant, not full, cost' early, because it shows you know allocated overhead stays. Then give the saving, the break-even and a sentence on the strategic risks, and conclude whether you would buy.

INT.KO.2.a · Turnaround and transformation

Diagnose a failing business in the right order, starting with cash and liquidity, and choose the actions that stabilise it before a longer-term plan.

A turnaround runs in an order: stabilise, diagnose, fix, then grow. The first question is not why performance fell but how long the company can pay its bills, because a business that runs out of cash cannot be fixed. Work out runway (cash plus committed, available credit, divided by monthly cash burn), build a 13-week cash forecast from the bank, payroll, suppliers and customers, and check covenants, maturities and who can call the debt. Profit and cash differ through receivables, stock, capital spending, tax and debt repayment, so a profitable business can run short and a loss-making one can survive for a while. Quick levers are collecting cash from customers, trimming stock purchases, deferring capital spending and discretionary costs, negotiating terms with suppliers and landlords, and selling spare assets. Then diagnose: split the decline into volume, price and mix, and cost, and look at products, customers and sites for where value is made and lost. The usual mistakes are cutting costs across the board, ignoring lenders until too late, and treating a cash release as a recovery.

WORKED EXAMPLE: CASH FIRST AT HALDEN RETAIL

Halden Retail, an invented fashion chain, has cash of GBP 6.0m, an undrawn facility of GBP 4.0m that the bank may withdraw if covenants are breached, and a net cash burn of GBP 2.5m a month. It holds stock of GBP 18.0m. Management can cut stock buying to release GBP 2.4m of cash and close six stores that each lose GBP 0.15m a month in cash, at a one-off exit cost of GBP 0.3m each. Assume the actions take effect at once. How long is the runway before and after?

Answer: Runway moves from 2.4 months to about 4.1 months on cash alone, and from 4.0 to 6.6 months with the facility. Those months are for finding the real fix, not the fix itself.

Interview tip: Say 'runway first, then the quick actions, then the diagnosis'. Put the runway in months, separate one-off cash from lasting improvement, and mention the lender conversation, because the facility is the risk.

INT.KO.2.b · Turnaround and transformation

Size a cost transformation by lever, separate lasting savings from one-offs, set out cost to achieve, risk and timing, and explain how spans and layers drive organisation cost.

A cost transformation starts from the cost base, split by where money goes, and sizes savings by lever: spend (procurement, demand management), process (lean, automation, shared services), organisation (spans, layers, location), footprint and complexity. Across-the-board cuts are quick but blunt, since they hit valuable and wasteful activity alike; targeted programmes take longer but protect what earns money. Always separate run-rate savings (the yearly amount once fully in place) from in-year savings (what lands in the period, after phasing) and from one-offs such as stock release, and net out double counts between levers. Cost to achieve (severance, systems, consultants) often runs at around one times the yearly saving or less, so check payback. Risk-adjust each lever for the chance it is delivered. Organisation design adds spans of control (direct reports per manager) and layers: wider spans mean fewer managers and layers but less time per person, so they suit routine, similar work and not complex, varied jobs. The usual mistakes are claiming savings that are really cost shifts, ignoring one-off costs, and taking out layers without checking decision speed.

WORKED EXAMPLE: SIZING A COST PROGRAMME AT BEXLEY INSURANCE

Bexley Insurance, an invented insurer, has a cost base of GBP 240m. Three levers are proposed. Procurement: GBP 80m of third-party spend, 8% saving. Automation: GBP 60m of operations staff cost, 15% productivity gain. Organisation: 520 non-managers with an average span of 4, moving to 6.5, with managers costing GBP 70,000 each. Delivery chances are 90%, 70% and 80%. One-off costs are GBP 0.5m for procurement, GBP 8.0m for automation, and severance of GBP 60,000 for each manager role removed. Size the programme, risk-adjust it, and find the payback. Assume a single layer of managers.

Answer: The programme is worth GBP 18.9m before risk (7.9% of costs) and about GBP 14.9m after risk, for GBP 11.5m of one-off cost, a payback of about nine months once fully in place, with a net cost in year one.

> **Interview tip:** Always give the three numbers: gross run-rate, risk-adjusted run-rate and cost to achieve. Then say when it pays back. Interviewers listen for the difference between 'identified' and 'delivered' savings.

INT.KO.2.c · Turnaround and transformation

Assess a digital, AI or sustainability initiative on value, feasibility and adoption, and set out the change-management plan that makes it stick.

Technology and sustainability cases follow the same logic: start with the business problem and the value pool, not the tool. For a digital or AI idea, size the benefit (volume times time saved times cost, or revenue uplift, or fewer errors), then test feasibility (data quality, integration, skills, security, cost) and run a pilot before scaling. Time saved is not cash saved: the benefit only becomes cash if the freed capacity is removed, redeployed to paid work or lets the company avoid hiring. Adoption decides results, so plan for it: a clear sponsor, a case for change people understand, role and process redesign, training, incentives and measures, early visible wins, and attention to those who resist for good reasons. For sustainability or net zero, measure the emissions baseline by source (direct, purchased energy and the wider value chain), rank levers by tonnes saved and cost per tonne, sequence with asset replacement cycles, and treat offsets as a last resort, not the plan. Claims should be hedged because rules and prices vary by jurisdiction and change. The usual mistakes are tool-first thinking, counting uncashed savings, and under-investing in change.

WORKED EXAMPLE: AN AI ASSISTANT FOR CLAIMS HANDLING AT CALDER MUTUAL

Calder Mutual, an invented insurer, has 200 claims handlers who together process 440,000 claims a year at 45 minutes each. A proposed AI assistant is expected to cut handling time by 20% on the 70% of claims it can support. A handler provides 1,650 productive hours a year and costs GBP 42,000. The tool costs GBP 250,000 a year in licences, GBP 400,000 to integrate and GBP 150,000 for training and change. What is the benefit, and what could go wrong with it?

Answer: At full adoption the tool frees 28 handlers' worth of time, worth about GBP 1.2m a year, or about GBP 0.93m after licences, for GBP 0.55m of one-off cost. The case depends on adoption and on turning the freed time into real cash.

> **Interview tip:** Say the chain out loud: eligible volume, minutes saved, hours, people, £. Then say 'time saved is only cash if we take the capacity out or use it', which shows judgement a tool-first answer lacks.