Technology, media and telecom

Sector coverage · Technology, media and telecom · interview preparation summary

INT.BC.5.a · Technology, media and telecom

Classify a technology, media or telecom company as software, hardware and semiconductors, internet and platforms, media or telecoms from what the customer pays for and how much capital it needs, and say what that means for its valuation and financing.

Technology, media and telecom is five businesses under one label, and the coverage banker's first job is to say which one the client is. Software sells code that customers rent or licence, so revenue is often recurring, gross margin is high and capital needs are low. Hardware and semiconductors sell physical products, so revenue is lumpier, margins are lower and inventory and capital spending matter. Chip designers are asset-light, while chip manufacturers need heavy investment in fabrication plants. Internet platforms connect users with each other or with advertisers, so value grows with the network while the cost of each extra user stays small. Media creates or distributes content and earns from subscriptions, advertising or licensing, and content spending is the main cost. Telecoms operators sell connectivity over networks that cost a great deal to build and then earn steady cash from subscribers. Three tests sort most companies. Ask what the customer pays for, how often it repeats, and how much the company must keep spending just to stand still. A subscription software company and a mobile operator both have recurring revenue, but the operator spends a large share of sales on its network every year and the software company does not. That difference decides whether to value on revenue, EBITDA or cash flow after capital spending, and how much debt the business can carry. Capex intensity = Capital expenditure ÷ Revenue. Cost of building the product is also shown differently. Software developers' wages are partly capitalised, so the income statement can hide spending that an operator shows openly as capex. The common mistake is to treat all technology as high growth and high margin. A device assembler with a gross margin near 15 percent and an internet marketplace with a gross margin near 70 percent need different questions. Another mistake is to forget that one group can span several models, such as a company with a device business, a services arm and a content library. In that case split it by segment before choosing a lens. For a banker the classification also shapes the product pitch. Recurring, asset-light software suits leveraged finance and take-private ideas. Capital-heavy telecoms suit investment grade bonds, asset sales and infrastructure partners. Cyclical hardware suits convertibles and equity follow-ons timed to the upturn. In an interview, name the model first, then the revenue type, then the capital need, and only then talk about the multiple.

WORKED EXAMPLE: THREE COMPANIES, THREE DIFFERENT WAYS TO USE THE SAME LABEL

A coverage team is asked to describe three invented companies to a new colleague. Halden Cloud sells workflow software on annual subscriptions, with revenue of 200.0m, about 90% of it recurring, a gross margin of 78%, EBITDA of 50.0m and capital spending (including capitalised development) of 6.0m. Brisk Mobile is a mobile operator with revenue of 1,200.0m, about 85% recurring service revenue, EBITDA of 420.0m and capital spending of 216.0m. Corvane Devices assembles consumer devices, with revenue of 600.0m, 5% recurring, a gross margin of 24%, EBITDA of 66.0m and capital spending of 24.0m. Classify each, compare capital needs and say how much a lender would find comfortable. Convention: all money in £, m for millions; ignore tax and working capital; a lender is assumed to offer debt of 4.0 times EBITDA at an interest rate of 7%.

Answer: Halden is recurring and asset-light (capex 3.0% of revenue, cover 3.1 times at 4.0 times EBITDA), Brisk is recurring but capital-heavy (capex 18.0%, cover 1.7 times), and Corvane is a one-off seller with thin margins (capex 4.0%, cover 2.3 times). The label is the same and the financing and valuation are not.

> **Interview tip:** Say it in this order: what the customer pays for, whether it repeats, how much capital it takes, then the lens. For example: recurring and asset-light, so I would look at retention and growth, and I would size debt on recurring revenue and cash after capex.

INT.BC.5.b · Technology, media and telecom

Name the metrics a coverage banker reads first in software, semiconductors, platforms, media and telecoms, quote typical ranges, and say what a figure outside the range means.

Each part of technology, media and telecom has its own first metrics, and a banker who quotes the wrong ones loses the room. Software starts with annual recurring revenue, gross revenue retention and net revenue retention. Gross retention is often in the 90s and net retention above 100 percent in healthy businesses, though products sold to small customers usually churn faster. Rule of 40 = revenue growth % + EBITDA margin %. A score near 40 is often treated as healthy, but it flatters a company that buys growth with heavy sales spending, so also check customer acquisition cost payback. Software gross margins are often 70 to 85 percent. Semiconductors start with gross margin, inventory days, book-to-bill and the share of revenue spent on research. Book-to-bill above 1 means orders exceed shipments, and inventory growing faster than sales is an early warning. Platforms start with active users, revenue per user, take rate and contribution margin after the cost of serving each user, followed by cohort retention. Media starts with subscribers, churn, average revenue per user and content spending as a share of revenue. Monthly churn of 2 to 4 percent is common in streaming, which means customers are replaced several times over a few years. Telecoms start with average revenue per user, churn, EBITDA less capex and net debt to EBITDA. Capex is often 15 to 20 percent of revenue for network operators, so EBITDA less capex shows the cash that is left. Net debt to EBITDA of 2 to 3 times is common for an investment grade operator. Always read a ratio against peers and the company's own history, because a figure that is normal for a platform could signal distress in an operator. A common mistake is to quote revenue growth without saying how much was acquired or came from price rises. Another is to compare gross margins before checking what each company puts into cost of sales, since some include hosting, support or content amortisation and others do not. A third is to quote an adjusted profit figure without saying what was added back. A good habit is to name the metric, give the company's figure, then say whether it is normal and what moved it.

WORKED EXAMPLE: READING A STREAMING SERVICE FROM FIVE NUMBERS

Quillon Stream is an invented subscription video service. In the last quarter it opened with 4.00m subscribers, added 0.60m gross new subscribers and lost 0.36m. Average revenue per subscriber is 8.50 a month. Content cost for the quarter was 63.0m and marketing for the quarter was 30.0m, all of it spent to win the new subscribers. Work out the closing base, revenue, monthly churn, content cost as a share of revenue, the cost to win a subscriber, the payback and the lifetime gross profit per subscriber, then say what you make of it. Convention: pounds, m for millions; revenue is average subscribers times monthly revenue per subscriber times three months; ignore tax, payments costs and discounting; lifetime is one ÷ monthly churn.

Answer: The base grows to 4.24m and revenue is 105.1m a quarter. Monthly churn is 3.0%, content takes 60.0% of revenue, the cost to win a subscriber is 50 and payback is 14.7 months against a life of 33.3 months. The unit economics work but depend on churn staying low.

> **Interview tip:** Say it in this order: base and revenue, churn, content share, then payback against lifetime. For example: churn of 3% a month gives a 33 month life, payback is 15 months, so it works, but I would check cohorts before relying on the average.

INT.BC.5.c · Technology, media and telecom

Choose the valuation multiples that fit software, hardware, platforms, media and telecoms, build a clean peer set, and place a company within its range rather than at the median.

Valuation in technology, media and telecom starts with picking the multiple that matches how the business makes cash. Mature, profitable companies are valued on enterprise value to EBITDA or on price to earnings. Fast-growing software companies with thin profits are often valued on enterprise value to revenue or to recurring revenue, because the profit is expected later. A revenue multiple only makes sense with growth and margin beside it, so compare the multiple with the rule of 40 score or with growth. Telecoms operators and tower companies carry heavy capital spending, so enterprise value to EBITDA less capex is fairer than EBITDA alone. Semiconductor and hardware earnings swing with the cycle, so a multiple on peak earnings looks low at the top and high at the bottom. Use mid-cycle earnings, or look at enterprise value to sales and price to book at the extremes. Groups with several businesses suit a sum of the parts, valuing each segment at the multiple of its closest peers. Precedent transactions add a control premium, often 20 to 40 percent over the unaffected share price, and for a strategic buyer some value for synergies. A discounted cash flow suits stable cash generators, but for growth companies most of the value sits in the terminal year, so show how the answer moves with growth and the exit multiple. Adjust the comparable set before using it. Remove companies with a different model, size or growth rate, and put stock-based compensation on the same footing in every name. Treat share-based pay as a real cost, because EBITDA that ignores it overstates cash earnings in many software companies. Enterprise value = Equity value + Net debt + Leases and other debt-like items − Cash. Check that every company in the set uses the same definition of debt, especially leases and convertible bonds. The usual mistake is to apply the median of a wide set to a company that sits at one end of it. A better answer places

the target within the range using its growth, margin and retention, and says why. Another mistake is to quote enterprise value to revenue without checking that the revenue is recurring. In an interview, say which multiple fits, name the two or three closest peers, adjust for share-based pay and leases, and give a range rather than a point.

WORKED EXAMPLE: PLACING A SOFTWARE TARGET WITHIN ITS PEER RANGE

A sell-side team is valuing Calder Systems (invented), an application software business with revenue of 250.0m growing 14%, EBITDA of 60.0m before stock-based compensation of 12.0m. Four listed peers have growth, EBITDA margin (after share-based pay) and enterprise value to revenue as follows: Alder 30%, 10%, 9.0x. Brenn 22%, 18%, 8.0x. Cassel 15%, 25%, 6.4x. Dovey 12%, 28%, 5.6x. Work out the value from the median, then from the two closest peers on revenue and on EBITDA, and give a range. Convention: pounds, m for millions; peers' EBITDA is after share-based pay; use the whole-set median of 7.2x for the naive answer.

Answer: A range of about 1,200m to 1,400m, centred on 1,300m or 5.2x revenue, not the 1,800m the wide-set median would suggest.

Interview tip: Say it in this order: which multiple, which peers and why, what you adjusted, then the range. For example: the closest two peers by growth give 5.6x to 6.4x revenue, after share-based pay Calder sits at the low end, so I would show about 5 to 5.5 times revenue.

INT.BC.5.d · Technology, media and telecom

Explain what drives M&A, equity and debt capital markets activity in technology, media and telecom, what investors and rating agencies ask, and which pitch ideas follow.

Activity in technology, media and telecom comes from change in technology, scale economics and the cost of capital. In software, strategic buyers want product breadth, new customers and cross-selling, and sponsors want recurring revenue they can lever and improve. Take-privates follow when a listed software company trades below what a private owner would pay for its cash flow. Semiconductor deals are driven by scale, design wins and security of supply, and they often face regulatory review in several countries. Media deals follow the move from linear television and print advertising to streaming, so owners merge, sell or split businesses to build scale or shed decline. Telecoms deals follow the need for scale in markets with too many operators and for money to pay for networks. A common idea is to sell towers or fibre to an infrastructure investor, which raises cash at a higher multiple than the operator itself trades on. In equity capital markets, a software investor asks about growth, retention and the path to profit, and a hardware investor asks about the cycle and customer concentration. Dual-class shares and founder control are common in technology listings and investors price that in. Convertible bonds suit growth companies that want a low coupon and accept dilution. In debt capital markets, telecoms operators are large regular issuers because of heavy network spending, and ratings turn mainly on net debt to EBITDA and cash flow after capital spending. Highly leveraged software borrowers rely on loans sized on recurring revenue and EBITDA, and lenders check churn and cash conversion. Debt capacity = Cash flow after capital spending ÷ (Required interest cover × Interest rate). Pitch ideas follow from these drivers. Examples are a carve-out of a slow business from a growing one, a merger of two weaker operators, a buyback funded by bonds, or a spin-off that gives each part a purer multiple. Before pitching, test the idea with three questions. Who is the natural buyer, can they afford it, and will competition authorities allow it? Remember that a stock-funded deal depends on the buyer's own share price, which is more volatile for growth names.

WORKED EXAMPLE: A TOWER SALE PITCHED TO AN OPERATOR

Marlow Telecom (invented) has EBITDA after leases of 900.0m, net debt of 3,150.0m and trades at 7.0 times EBITDA. A coverage banker proposes selling its mobile towers to an infrastructure investor for 900.0m and renting the space back. Running the towers costs Marlow 25.0m a year today, and the rent after the sale would be 70.0m a year. Show the effect on leverage, the multiple at which the towers are sold, the value effect if the market keeps its 7.0 times, and what a rating agency would add. Convention: pounds, m for millions; proceeds repay debt; interest on the debt repaid is 5%; an agency capitalises the rent at 10 times as debt and adds the rent back to EBITDA; ignore tax and fees.

Answer: Headline leverage falls from 3.50 to 2.63 times, the towers sell at 20.0 times against 7.0 times for the group, and equity value rises by about 585m if the market keeps its multiple. An agency counting the rent as debt sees 3.19 times, so the credit benefit is much smaller.

Interview tip: Say it in this order: the idea, the multiple gap, the headline leverage, then what the agency would add. For example: sell at 20 times, repay debt, headline leverage falls by about 0.9 turn, but lease-adjusted it is only about 0.3 turn.

INT.BC.5.e · Technology, media and telecom

Place a technology, media or telecom company in its cycle, find the accounting traps that overstate its earnings, and finish with a short end-to-end view on valuation, timing and product.

Technology, media and telecom cycles differ by sub-sector, and a coverage banker must say where each stands before suggesting a deal. Semiconductors and hardware run on inventory cycles, with orders rising, customers over-ordering and then destocking, which cuts revenue sharply for several quarters. Advertising-funded media and platforms follow the economy through advertising budgets. Enterprise software follows corporate budgets more slowly because subscriptions delay the effect. Telecoms are defensive but face price competition and regulation. Technology change is a further risk, and it can break a business within one product cycle. Watch for accounting traps. Software may capitalise development cost, which lifts EBITDA and moves the spending into amortisation. Revenue recognition on long contracts can pull sales forward, and deferred revenue growing slower than revenue is a warning. Platforms often report adjusted profit that excludes stock-based compensation, which in some companies is above 15 percent of revenue. Hardware can book revenue when goods are shipped to distributors, so check channel inventory. Media groups amortise content over time, and slow amortisation makes profit look higher than the cash spent. Telecoms should be read after leases, because tower rent and network leases can sit outside EBITDA. Cash conversion = (EBITDA − capital expenditure − capitalised development) ÷ EBITDA. A short end-to-end method works for any company. Classify it, check the key metrics against peers, adjust earnings for the traps above, choose the valuation method, and state what the cycle implies for timing and structure. For example, a chip maker with rising inventory, book-to-bill below 1 and a record margin is late in its cycle. Selling or issuing equity is attractive, but a buyer should not pay a peak multiple on peak earnings, and lenders should size debt on mid-cycle cash flow. Close the answer with a clear view on whether to pitch now or wait.

WORKED EXAMPLE: IS THIS CHIP MAKER AT THE TOP OF ITS CYCLE?

Merrow Micro (invented) designs and sells chips to equipment makers. Last year revenue was 650.0m, cost of sales 390.0m and inventory 120.0m. This year revenue is 800.0m, cost of sales 456.0m and inventory 190.0m. EBITDA this year is 232.0m as reported, which includes capitalised development cost of 36.0m but is stated before stock-based compensation of 48.0m. Capital spending is 70.0m. Book-to-bill for the last two quarters has averaged 0.82. The board wants an equity follow-on and a new loan, and a sponsor has asked about a take-private at 9.0 times reported EBITDA. Assess the cycle and the earnings quality and say what you would pitch. Convention: pounds, m for millions; 365-day year; inventory days use cost of sales and year-end inventory; mid-cycle EBITDA is judged to be 175.0m.

Answer: A late-cycle company: inventory up 58% against revenue up 23%, book-to-bill 0.82 and a record margin. Earnings are lower in quality than the headline (cash conversion 54%). Pitch an equity follow-on to use the window, and size any debt or bid on mid-cycle EBITDA of 175m, not 232m.

> **Interview tip:** Say it in this order: where is the cycle, how good are the earnings, then what the cycle means for the product. For example: late cycle on inventory and orders, quality is mediocre, so equity now and debt sized on mid-cycle.

INT.BC.5.f · Technology, media and telecom

Name the material sub-sectors of technology, media and telecom, and for each say what drives demand, the economic model, the first metrics, the usual misread and how the product groups meet it.

Technology, media and telecom divides into ten sub-sectors, and a good answer names the sub-sector before anything else. Application software sells subscriptions to business users, demand follows productivity needs, revenue recurs, read net retention and the rule of 40 first, the misread is growth bought with sales spending, and bankers meet it in take-privates and recurring revenue loans. Infrastructure software and security sells data, cloud and protection platforms, demand follows IT budgets and threats, revenue is subscription and usage, read net retention and free cash flow first, the misread is usage that can fall, and bankers meet it in convertibles. IT services sells projects and managed contracts, demand follows corporate change programmes, revenue is contracted but labour-based, read utilisation and organic growth first, the misread is margin resting on cheap labour, and bankers meet it in buy-and-build. Semiconductors sell chips, demand follows end markets and inventory cycles, revenue comes by order, read book-to-bill, inventory days and gross margin first, the misread is peak earnings, and bankers meet it in strategic deals and equity timing. Hardware and devices sell products through channels, demand follows replacement cycles, revenue is one-off with service attached, read gross margin and channel inventory first, the misread is shipped but unsold stock, and bankers meet it in carve-outs. Internet and platforms earn advertising and fees from users, demand follows engagement, revenue is transactional, read active users, take rate and contribution margin first, the misread is adjusted profit that excludes share-based pay, and bankers meet it in listings. Streaming and content businesses sell subscriptions and licences, demand follows the content slate, revenue recurs but churns, read churn, revenue per user and content cost first, the misread is slow content amortisation, and bankers meet it in mergers and library sales. Broadcast,

publishing and outdoor media earn advertising, demand follows the economy and audience shift, revenue is cyclical, read advertising share, margin and cash conversion first, the misread is price rises hiding a falling audience, and bankers meet it in disposals and high yield. Mobile and fixed operators sell connectivity on contracts, demand is steady with price competition, revenue recurs but needs capital, read revenue per user, churn and EBITDA less capex first, the misread is EBITDA before leases, and bankers meet it in bonds and mergers. Towers and fibre rent shared infrastructure to operators, demand follows data traffic, revenue is long contracted with escalators, read tenancy, lease length and EBITDA margin first, the misread is customer concentration, and bankers meet it in infrastructure sales. In an answer, name the sub-sector first, then the driver, then the two or three numbers, then the product.

WORKED EXAMPLE: THREE SUB-SECTORS, THREE SETS OF FIRST METRICS

A coverage team has one page on each of three invented companies. Orrin Security sells cyber-security subscriptions: opening ARR 120.0m, churn 6.0m, downgrades 3.0m, expansion 21.0m, new customers 18.0m, free cash flow 33.0m. Tallis Towers owns 6,000 sites with 9,000 tenancies, revenue of 270.0m and EBITDA of 189.0m. Pellam Broadcast is a regional television and radio group with revenue of 300.0m, of which 255.0m is advertising, EBITDA of 66.0m and capital spending of 27.0m. Place each in its sub-sector, compute the first metrics for that sub-sector and say what each would worry you about. Convention: pounds, m for millions; year-end figures; ignore tax.

Answer: Orrin is software with net retention of 110%, Tallis is infrastructure with 1.5 tenants a site and a 70% margin, and Pellam is advertising media with 85% of revenue from advertising. Different first metrics, different risks and different products.

> **Interview tip:** Say it in this order: the sub-sector, the driver, then the two or three numbers. For example: Orrin is security software, so retention and cash matter, net retention is 110%, so I would ask what drives the expansion.

Summary of the Charta interview-preparation topic. Companies and figures in the examples are invented. Draft content, not yet expert reviewed.