MVP Strategy: "Next Best Action" Propensity Model

Project Goal: To proactively identify high-potential prospects for Cazenove Capital using interpretable data science.
Target Delivery: Q1
Methodology: Three-Stage Bayesian Pipeline (Timing $\rightarrow$ Value $\rightarrow$ Access)

1. Target Group: PE-Backed Management Teams

The Objective: Predict liquidity events (Trade Sales or IPOs) for private equity portfolio companies to target their management teams for wealth planning services.

Stage 1: Timing Prediction (The "When")

- **Model:** Bayesian Piecewise Exponential Survival Model.
- **The Question:** *Given the PE fund has held this company for t years, what is the probability of an exit in the next 12 months?*
- **Key Signals (Preqin):**
    - **Duration:** Years since initial investment (Standard holding period is 3-5 years).
    - **Fund Vintage:** Is the fund nearing the end of its 10-year lifecycle?
    - **Fund Behavior:** Historical average holding periods for this specific PE firm.
- **Output:** A probability score (0-100%) indicating "Exit Imminence."

Stage 2: Wealth Estimation (The "How Much")

- **Method:** Valuation Heuristic (since cap tables are opaque).
- **Formula:** (EBITDA × Sector Multiple × Est. Stake) - Debt Haircut
- **Logic (Beauhurst/Companies House):**
    - Apply a sector-standard multiple (e.g., 12x for Tech, 8x for Industrial) to the company's latest EBITDA.
    - Deduct ~30-40% for debt/preferences to get Net Equity Value.
    - Apply role-based stake estimates (e.g., CEO ≈ 3-5%, Founder-CEO ≈ 15%+).
- **Output:** Tiered Wealth Bucket (e.g., "Expected Proceeds: £3m–£5m").

Stage 3: Proximity (The "Who")

- **Method:** Shortest Path Algorithm.
- **Logic (BoardEx/Salesforce):** Calculate the distance between Schroders personnel and the target.
    - *Direct:* PM knows the prospect.
    - *Indirect:* PM knows a Board Director at the prospect's company.
- **Output:** The specific PM name to assign the lead to.

2. Target Group: Corporate Executives (Public Companies)

The Objective: Predict "Money in Motion" moments—vesting cliffs, role changes, or retirement—where executives need to diversify concentrated stock positions.

Stage 1: Timing Prediction (The "When")

- **Model:** Bayesian Hazard Model (Role Duration).
- **The Question:** *Given this executive has been in their role for* t *years, what is the probability of a role change or major stock sale in the next 12 months?*
- **Key Signals (BoardEx):**
    - **Tenure:** Probability of movement spikes at standard vesting anniversaries (3 and 5 years).
    - **Age:** Proximity to retirement age (55, 60, 65).
    - **Market Activity:** Recent patterns of insider selling in the wider sector.
- **Output:** A probability score indicating "Likelihood of Liquidity/Movement."

Stage 2: Wealth Estimation (The "How Much")

- **Method:** Deterministic Calculation (Public Ledger).
- **Formula:** (Shares Owned × Share Price) + (Annual Comp × Years)
- **Logic (BoardEx/Market Data):**
    - Aggregate legally disclosed shareholdings and multiply by current market price.
    - Identify "Realized Wealth" (Cash from recent stock sales) vs. "Paper Wealth" (Unsold shares).
- **Output:** Exact "Liquid Assets" estimate + "Concentration Risk" flag.

Stage 3: Proximity (The "Who")

- **Method:** Boardroom Overlap Mapping.
- **Logic (BoardEx):**
  - Identify current clients who sit on the *same board* as the prospect.
  - Identify Schroders executives who have sat on boards with the prospect in the past.
- **Output:** A list of "Warm Introducers."

3. Target Group: Entrepreneurs (High-Growth Scale-ups)

The Objective: Predict major funding rounds (Series B/C) where founders typically sell a portion of their equity ("Secondary Sale") to de-risk.

Stage 1: Timing Prediction (The "When")

- **Model:** Bayesian Time-to-Next-Funding Model.
- **The Question:** *Given this startup raised Series A t months ago, what is the probability of a Series B round in the next 6 months?*
- **Key Signals (Beauhurst):**
  - **Burn Rate Proxy:** Time elapsed since last round vs. Amount Raised.
  - **Growth Velocity:** Headcount growth rate (hiring requires capital).
  - **Sector Norms:** Average time between rounds for the specific industry.
- **Output:** A probability score indicating "Fundraising Imminence."

Stage 2: Wealth Estimation (The "How Much")

- **Method:** Cap Table Proxy.
- **Formula:** Est. New Valuation × Ownership % × Secondary Sale %
- **Logic (Beauhurst):**
  - Estimate the new valuation based on the upcoming round size.
  - Apply standard founder dilution curves (e.g., Founder owns ~15-20% at Series B).
  - Assume a standard "Cash Out" percentage (founders typically sell 10-20% of their holdings in secondary sales).
- **Output:** Tiered Potential Cash-Out Bucket.

Stage 3: Proximity (The "Who")

- **Method:** Investor/VC Bridging.
- **Logic (Beauhurst/Salesforce):**
  - Identify the Venture Capital funds backing the startup.
  - Check if Schroders manages money for the VC partners or the fund itself.
  - Use the VC relationship as the bridge to the founder.
- **Output:** The relationship pathway (e.g., "Intro via VC Partner").

Summary of Data Sources

Target Group	Stage 1 (Timing)	Stage 2 (Value)	Stage 3 (Access)
PE-Backed	**Preqin** (Fund Data)	**Beauhurst / Companies House** (Financials)	**BoardEx** (Network)
Executives	**BoardEx** (Role Tenure)	**BoardEx / Market Data** (Holdings)	**BoardEx** (Network)
Entrepreneurs	**Beauhurst** (Funding History)	**Beauhurst** (Cap Table)	**Beauhurst / Salesforce** (VC Links)

Why this fits the Brief

1. **Interpretable:** The Bayesian approach allows us to say *"We flagged this because Probability X rose due to Signal Y"* rather than offering a black-box prediction.
2. **Simple Architecture:** While the data inputs differ, the logic is consistent across all three groups (Time $\rightarrow$ Value $\rightarrow$ Access).
3. **Action-Oriented:** Every output leads to a specific "Next Best Action" (e.g., "Call now regarding upcoming Series B").