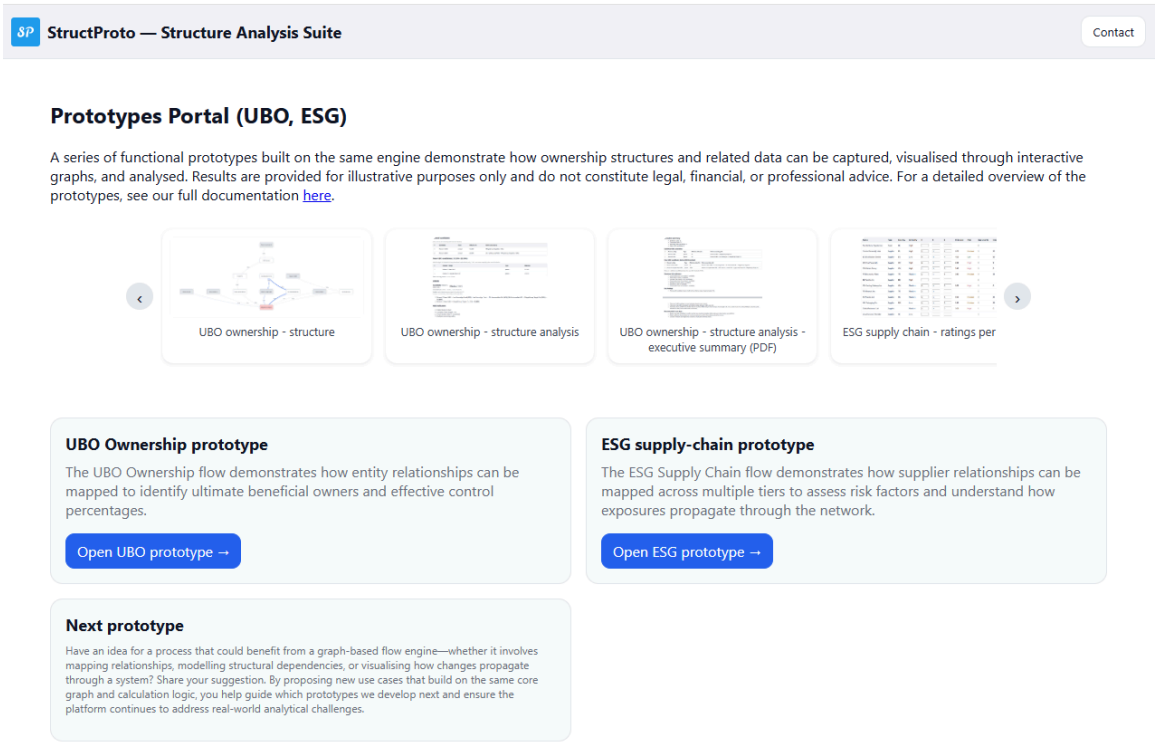
Structure Analysis Suite



UBO and ESG prototypes

www.structproto.com

Introduction

The market for regulatory, ESG, and financial-assessment tools is crowded—but increasingly polarised. On one side are **free public registries** and simple calculators that provide raw data but little interpretation. On the other are **large commercial platforms** whose sophistication often comes with drawbacks: complex onboarding, heavy configuration, opaque scoring logic, and pricing structures unsuitable for consultants, smaller firms, or project-based work.

Our UBO and ESG prototypes are designed to occupy a **middle ground that is critically under-served**: tools that are **transparent, explainable, lightweight, and scenario-friendly**, while still providing **meaningful analysis** rather than static lookup functions.

Rather than competing with enterprise systems on breadth or automation, these tools focus on **clarity**, **auditability**, and **immediate usability**:

- Every calculation is visible and reproducible—no black boxes.
- Every result is linked to underlying data or ownership paths.
- Every scenario can be exported, edited, and re-imported.
- Graphs and reports remain simple enough for non-specialists, yet detailed enough for due-diligence work.

In a landscape where many products claim "AI-driven insights" but deliver obscure numerical scores, our approach is intentionally different:
analytical tools that behave like instruments, not oracles.

They are built for professionals who value clarity, transparency, and the ability to experiment—whether that means exploring alternative ownership structures or examining how supplier-risk propagates through a network.

While these are still prototypes and not intended for production use, they provide a lightweight, transparent environment for learning, analysis, and early-stage scenario exploration without the complexity of full-scale enterprise platforms.

Definitions

UBO (Ultimate Beneficial Owner) – The natural person(s) who ultimately owns or controls a company through direct or indirect ownership or control rights.

ESG (Environmental, Social, and Governance) – A framework for assessing non-financial risks. In this document, "ESG" refers specifically to *supplier-level ESG risk in multi-tier supply chains*.

User experience (UI/UX)

Across all three prototypes, the interface is built around **guided workflows and highly interactive visualisation**. A clean, wizard-style layout leads users through data entry, analysis, and reporting with minimal friction. Visual elements support smooth navigation and light interaction—such as **zooming** or inspecting nodes — while maintaining simplicity and transparency. The system also tracks scenario changes and provides **gentle "unsaved changes" reminders**, ensuring that work is never lost unintentionally. Combined with full

JSON import/export for scenario versioning, the overall UX emphasises **clarity, transparency, and smooth exploratory modelling** without the clutter or opacity typical of heavier enterprise tools.

Figure 1 - Interactive ESG supply-chain graph with multi-tier visualization

UBO Prototype

The UBO prototype's primary objective is transparent ownership analysis. It identifies direct and indirect owners through multi-tier traversal, computes effective ownership across all paths, and highlights UBO candidates via configurable thresholds. The emphasis is on explainability and graph-based exploration rather than black-box automation.

Feature Summary

- Multi-tier ownership tracing (direct + indirect) with path-based effective ownership.
- Automatic percentage aggregation across all ownership paths using configurable metrics.
- Threshold-based UBO detection with dedicated "near-UBO" categorisation.
- Nominee and public-body flags displayed as part of the analysis.
- Basic structural risk indicators (e.g., nominees, public bodies, long chains).
- Interactive ownership graph with path highlighting.
- Executive-style HTML report suitable for printing to PDF.

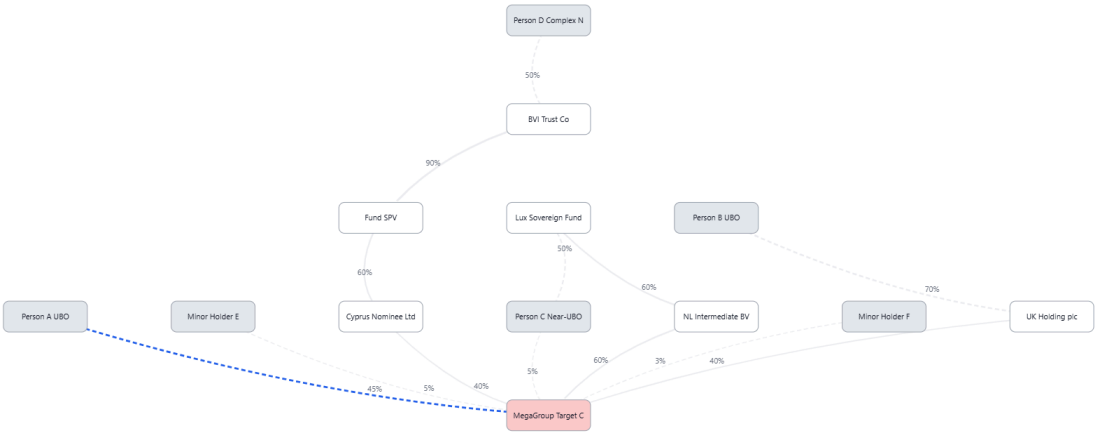


Figure 2 UBO ownership graph

Multi-tier ownership graph showing UBO and near-UBO candidates, nominee involvement, and highlightable control paths used to calculate effective ownership across complex structures.

Ranked candidates

Click a row to view ownership paths and risk indicators.

#	Candidate	Type	Effective %	Rationale (short)
1	Person A UBO	person	45.00%	MegaGroup Target Co (45%)
2	Person B UBO	person	28.00%	UK Holding plc (70%) → MegaGroup Target Co (40%)

Near-UBO candidates (10.00%–25.00%)

Below the legal UBO threshold but may be relevant under internal policy. Click a row to view ownership paths and risk indicators.

#	Person / Entity	Type	Effective
1	Person C Near-UBO	person	23.00%
2	Person D Complex Near-UBO	person	10.80%

Other minority holders: 2 below 10.00%.

Details

Candidate: Person C Near-UBO **Effective:** 23.00%

Threshold test: 23.00% < 25.00% → below threshold.
Config: metric=Max(share,vote), depth=8, epsilon=0.01%
Acting-in-concert=false, Public body passthrough=false

1. Person C Near-UBO → Lux Sovereign Fund (50%) , Lux Sovereign Fund → NL Intermediate BV (60%) , NL Intermediate BV → MegaGroup Target Co (60%) = **18.00%**
2. Person C Near-UBO → MegaGroup Target Co (5%) = **5.00%**

Risk indicators

- Public body in chain
- Complex chain (length ≥ 4)
- Cross-border chain (3 countries)
- Multiple ownership paths

Figure 3 UBO analysis panel

Ranked UBO and near-UBO candidates with calculated effective-ownership percentages, path-level details, and structural risk indicators, based on multi-tier ownership traversal.

Other use cases

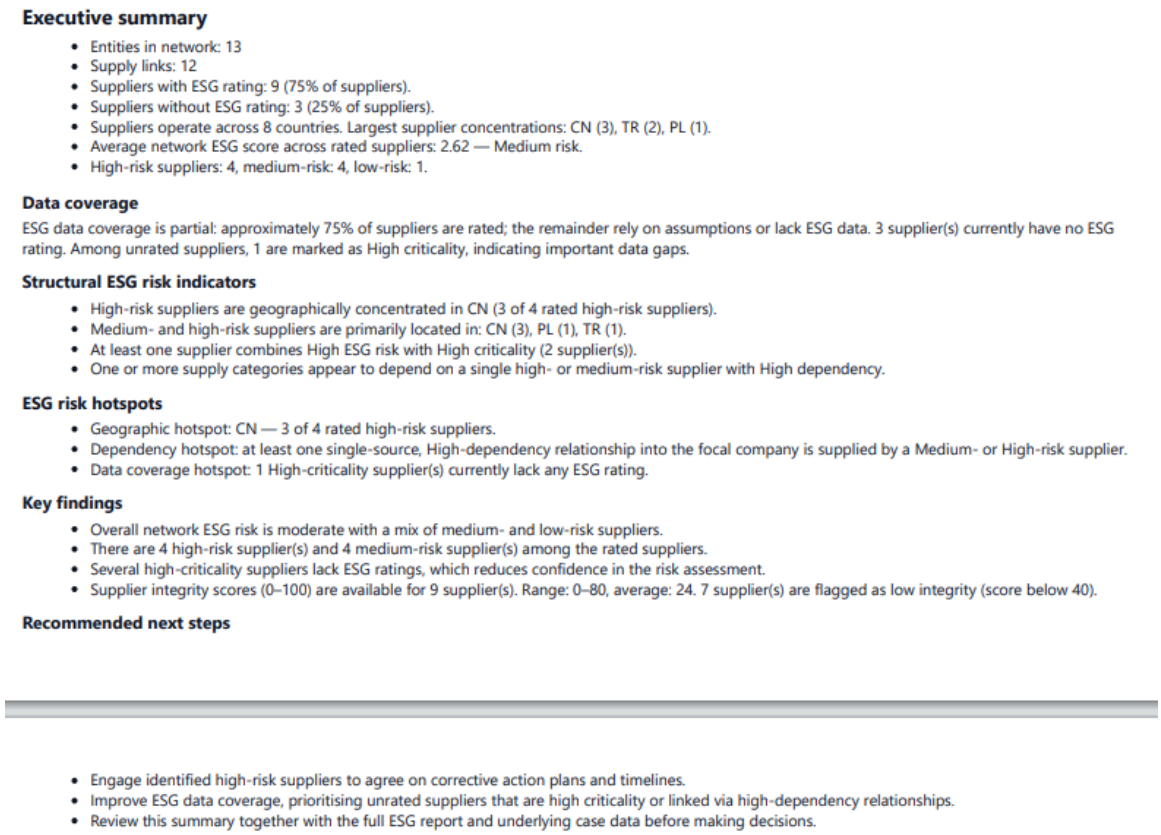
In addition to mapping ownership structures for regulatory UBO/AML work, the prototype allows users to explore alternative structures by adding or adjusting entities and relationships. Because the analysis is recomputed instantly, users can test how acquisitions, divestments or cross-holdings alter effective ownership and control paths. While not equipped with automated structure comparison or workflow functionality, it already serves as a flexible environment for experimenting with ownership arrangements, understanding nominee and public-body involvement, and observing how structural changes influence transparency and UBO identification.

ESG Supply chain prototype

The ESG prototype's primary purpose is to provide a transparent, lightweight but structured view of ESG risk within a multi-tier supplier network. It combines configurable ESG scoring with supplier criticality, data-completeness metrics, hotspot detection and a full interactive network graph.

Feature Summary

- Weighted ESG scoring (E/S/G → composite) via configurable weights.
- High/Medium/Low risk buckets with adjustable thresholds.
- Criticality-aware scoring integrating dependency tags.
- Gap severity indicator (0–3) reflecting data completeness.
- 0–100 integrity score combining disclosure, recency, coverage and risk.
- Textual "hotspot" indicators for geography, dependency and coverage.
- Optional Tier-2+ and Tier-3 risk propagation.
- Network-level risk aggregation and executive metrics.
- Interactive multi-tier supply-network graph.
- Executive and detailed HTML reports designed for PDF export.



Executive summary

- Entities in network: 13
- Supply links: 12
- Suppliers with ESG rating: 9 (75% of suppliers).
- Suppliers without ESG rating: 3 (25% of suppliers).
- Suppliers operate across 8 countries. Largest supplier concentrations: CN (3), TR (2), PL (1).
- Average network ESG score across rated suppliers: 2.62 — Medium risk.
- High-risk suppliers: 4, medium-risk: 4, low-risk: 1.

Data coverage

ESG data coverage is partial: approximately 75% of suppliers are rated; the remainder rely on assumptions or lack ESG data. 3 supplier(s) currently have no ESG rating. Among unrated suppliers, 1 are marked as High criticality, indicating important data gaps.

Structural ESG risk indicators

- High-risk suppliers are geographically concentrated in CN (3 of 4 rated high-risk suppliers).
- Medium- and high-risk suppliers are primarily located in: CN (3), PL (1), TR (1).
- At least one supplier combines High ESG risk with High criticality (2 supplier(s)).
- One or more supply categories appear to depend on a single high- or medium-risk supplier with High dependency.

ESG risk hotspots

- Geographic hotspot: CN — 3 of 4 rated high-risk suppliers.
- Dependency hotspot: at least one single-source, High-dependency relationship into the focal company is supplied by a Medium- or High-risk supplier.
- Data coverage hotspot: 1 High-criticality supplier(s) currently lack any ESG rating.

Key findings

- Overall network ESG risk is moderate with a mix of medium- and low-risk suppliers.
- There are 4 high-risk supplier(s) and 4 medium-risk supplier(s) among the rated suppliers.
- Several high-criticality suppliers lack ESG ratings, which reduces confidence in the risk assessment.
- Supplier integrity scores (0–100) are available for 9 supplier(s). Range: 0–80, average: 24. 7 supplier(s) are flagged as low integrity (score below 40).

Recommended next steps

- Engage identified high-risk suppliers to agree on corrective action plans and timelines.
- Improve ESG data coverage, prioritising unrated suppliers that are high criticality or linked via high-dependency relationships.
- Review this summary together with the full ESG report and underlying case data before making decisions.

Figure 4 ESG executive summary

Consolidated overview of ESG scores, criticality levels, risk buckets, coverage gaps and textual hotspots, summarising multi-tier supplier-network risk in a clear, exportable report format.

Other use cases

Beyond basic ESG reporting, the prototype lets users explore how changes in supplier structure affect risk. By adding, removing or modifying suppliers, adjusting criticality, or editing ESG ratings, users can test how structural changes propagate through Tier-1, Tier-2 and deeper levels. The ability to export and re-import JSON scenarios allows users to keep multiple snapshots of a network and revisit them later. Even without a dedicated scenario-comparison interface, it already offers procurement and sustainability teams a practical environment to visualise and experiment with network-wide ESG impacts.

Conclusion

These prototypes collectively demonstrate the potential of transparent, scenario-driven analysis tools for ownership and supply-chain ESG. Future iterations may extend functionality, incorporate user feedback, and deepen analytical depth while maintaining the core design principle of full explainability.

Disclaimer: *This document does not constitute legal, financial, or compliance advice. These tools are* ***still prototypes****, provided strictly on an experimental, non-production basis as described in the accompanying terms & conditions. They may contain limitations, edge-case behaviours, or incomplete features, and should therefore be used for exploration, demonstration, and educational purposes rather than operational decision-making.*