



# Comprehensive Blueprint for Stakeholder-Specific Pages & Intelligent Dashboards

This document provides an *in-depth blueprint* for the next generation of the **Yemen Economic Compass** platform. It builds on the earlier city and stakeholder report by specifying how to design, populate and implement **tailored pages for every major stakeholder**—companies, banks, microfinance institutions (MFIs), sanctioned entities, donor countries, and other groups—along with city-level pages. Each page is designed to combine narrative depth, high-integrity data, advanced visualisation, and live analytics.

The goal is to transform the platform into the **primary source of economic, financial and humanitarian intelligence on Yemen**, enabling users to trace how each actor and event shaped the country's economy from 2014 onwards and to test counterfactual scenarios. Citations from primary sources are provided where available; they should be used to verify facts and anchor narratives. Where explicit data is not available, the blueprint emphasises methodology and transparency to ensure reliability.

## 1. Principles for Stakeholder Pages

1. **Full Transparency & Source Integrity** – Every statistic, graph or claim must link back to a primary dataset or report. Confidence scores (e.g., high/medium/low) should be displayed based on source reliability, recency, and triangulation.
2. **Holistic Narratives** – Pages should balance numbers with context: timelines of key events, strategic decisions, regulatory changes, and humanitarian impacts. Each page should include pre-war baselines (2010–2014), fragmentation/post-2015 dynamics, and forward-looking scenarios.
3. **Objective & Balanced View** – Highlight both positive contributions (jobs, taxes, services) and controversies (sanctions, regulatory violations, market dominance). Avoid editorialising; present facts and analysis clearly.
4. **Bilingual Parity** – All content must be available in Arabic and English, with identical structure and depth. Use professional translation for narrative sections and consistent terminology across pages.
5. **Modular Design** – Stakeholder pages share a common template but allow sector-specific variations (e.g., banks vs. MFIs vs. conglomerates). This modularity ensures scalability as new actors or data sources are added.
6. **Interactive & Live** – Each page includes interactive dashboards with filters (time, region, sector), scenario sliders, and AI-driven Q&A. The underlying engine automatically updates data and narratives when new events or datasets arrive.

## 2. Architecture & Data Model

Each stakeholder page draws from the core database and knowledge graph described in the earlier report. Important tables include:

Table	Purpose	Key Fields
<b>actors</b>	Metadata about each company, bank, MFI, donor, government agency or individual	<code>actor_id</code> , <code>name_en</code> , <code>name_ar</code> , <code>type</code> (e.g., bank, company, donor), <code>ownership</code> , <code>country</code> , <code>headquarters</code> , <code>founded_year</code> , <code>active_status</code> , <code>logo_path</code>
<b>actor_profiles</b>	Extended profiles & narrative notes	<code>actor_id</code> , <code>mission_statement</code> , <code>history</code> , <code>strategic_objectives</code> , <code>controversies</code> , <code>humanitarian_contributions</code> , <code>employment_impact</code> , <code>notes</code>
<b>indicator_values</b>	Time series values for all economic, financial and humanitarian indicators	<code>indicator_id</code> , <code>actor_id</code> (nullable), <code>region_id</code> (nullable), <code>date</code> , <code>value</code> , <code>unit</code> , <code>source_id</code> , <code>confidence</code>
<b>events</b>	Records of events (regulatory decisions, sanctions, attacks, agreements)	<code>event_id</code> , <code>actor_id</code> (nullable), <code>date</code> , <code>type</code> (e.g., sanction, grant, policy change), <code>location</code> , <code>description</code> , <code>source_id</code> , <code>impact_estimate</code>
<b>documents</b>	References to primary documents (laws, circulars, audit reports, annual statements)	<code>doc_id</code> , <code>title</code> , <code>actor_id</code> (nullable), <code>year</code> , <code>type</code> (audit, law, report), <code>url_or_path</code> , <code>language</code> , <code>summary</code> , <code>confidence</code>
<b>sanctions</b>	Specific sanctions details (UN, US, EU, etc.)	<code>sanction_id</code> , <code>actor_id</code> , <code>jurisdiction</code> , <code>date_imposed</code> , <code>date_lifted</code> (nullable), <code>description</code> , <code>source_id</code>
<b>interconnections</b>	Relationships between actors (shareholding, partnerships, supply chain links)	<code>from_actor_id</code> , <code>to_actor_id</code> , <code>relationship_type</code> , <code>start_date</code> , <code>end_date</code>

Additional tables capture **scenario inputs**, **recommendations**, **user feedback** and **AI Q&A interactions**.

## 3. Components of a Stakeholder Page

Each stakeholder page (for a bank, MFI, company, donor country, or sanctioned entity) contains the following sections:

### 3.1 Overview Card

- **Name & Logo** – Display the official name in English and Arabic with a logo. Link the logo to the actor's website if available.
- **Classification** – Indicate whether the actor is a commercial bank, MFI, conglomerate, donor government, international organisation or sanctioned entity.
- **Ownership & Governance** – Show ownership structure (e.g., family-owned, state-owned, publicly listed) and key directors/owners. Where available, include shareholding percentages. Provide a timeline of major governance changes.
- **Year Established & Headquarters** – Provide founding year and HQ city/country.
- **Employees & Branches** – Display number of employees and branch or factory locations if relevant. For large companies like Hayel Saeed Anam (HSA), include global presence.
- **Status Flags** – Indicate whether the actor is currently operational, sanctioned, merged, dormant or under special administration.

### 3.2 Narrative Section

A curated narrative summarising:

1. **Origin & Growth** – Founding story, expansion milestones, diversification into sectors (e.g., HSA's growth from trading to manufacturing and banking).
2. **Role During Conflict** – Explain how the actor navigated the 2014–2025 fragmentation. For banks, discuss relocations (e.g., many banks moved headquarters from Sana'a to Aden to avoid US sanctions <sup>1</sup>). For companies, discuss supply-chain resilience and humanitarian contributions (e.g., HSA securing a \$75 million financing package in 2025 that safeguarded jobs and ensured access to fortified food <sup>2</sup>).
3. **Positive Contributions** – List contributions to the economy and society: jobs, tax payments, infrastructure, corporate social responsibility programmes and humanitarian aid. For MFIs, note financial inclusion successes.
4. **Negative/Controversial Issues** – Mention sanctions, accusations of monopoly, AML/CTF lapses or environmental and social concerns (e.g., sanctions against Al-Omgy Exchange and Brother Exchange for funding AQAP <sup>3</sup>). Summarise key regulatory violations and any remedial measures.
5. **Future Outlook & Strategic Plans** – Describe announced investments, planned expansions, digitalisation strategies, or expected restructuring. If relevant, link these to national recovery plans or global trends (e.g., green finance, digital payments).

### 3.3 Data Dashboards

Each stakeholder page should contain interactive dashboards tailored to the actor's nature. These dashboards draw on the **indicator\_values** and **events** tables and can be filtered by date, region and scenario. Some suggested dashboards include:

#### 3.3.1 Banks & Microfinance Institutions (MFIs)

- **Assets & Liabilities Timeline** – Chart total assets, customer deposits, loans issued and capital ratios over time. Include comparison to sector averages.

- **Liquidity & Stress Index** – Use the core banking stress index (CBSI) to show the actor's stress level compared with peers. Plot stress index against key events (sanctions, policy changes) to illustrate impacts.
- **Currency Exposure** – Visualise loans/deposits denominated in Aden vs. Sana'a rials and USD. Show mismatches that could create exchange-rate risk.
- **Remittances & Hawala Use** – Display volumes processed via formal vs. informal channels. Include details if the institution was a former money exchanger converting into a bank (e.g., Al-Kuraimi Islamic Microfinance Bank).
- **Sanctions & Compliance** – List sanctions, AML fines, or warnings. Provide a compliance heat map showing high-risk geographies or transactions.
- **Branch & Network Map** – Map out branch locations by governorate, along with the year each branch opened/closed.

### 3.3.2 Conglomerates & Companies

- **Sector Breakdown** – Use pie or bar charts to show revenue or employment share by sector (food processing, manufacturing, logistics, energy, banking, telecoms). For HSA Group, highlight presence in food, dairy, textiles, and shipping.
- **Employment Impact** – Chart the number of employees over time and estimate household livelihoods supported. Where possible, show gender and regional breakdowns.
- **Supply Chain & Trade** – Use Sankey diagrams to visualise import/export routes, source countries and shipping methods. Link to port disruptions and conflict events.
- **Corporate Social Responsibility (CSR) & Aid** – Quantify philanthropic contributions (cash, food donations, infrastructure projects). Link to World Food Program or OCHA data where available.
- **Financial Support & Investments** – Highlight financing packages (e.g., the World Bank/IFC \$75 million investment in HSA [2](#)), listing lenders and terms if public. Show capital expenditures and new projects announced.

### 3.3.3 Donor Countries & International Agencies

- **Funding Timeline** – Chart official aid flows (grants, loans, humanitarian assistance) by year, cluster and governorate. Show pledges vs. disbursements to highlight underfunding (only 19 % of OCHA's Humanitarian Response Plan was funded as of 2025).
- **Aid Allocation by Sector & Region** – Visualise distribution across health, education, WASH, food security, and early recovery. Compare to needs in each sector.
- **Macroeconomic Support** – Display budget support and deposits to the Central Bank (e.g., Saudi Arabia provided about **US\$2 billion** in support in 2023–24 and announced a **US\$368 million** package in September 2025 [4](#) [5](#)). Show how such support lowered deficits and stabilised FX rates.
- **Sanctions & Diplomacy** – Summarise each country's stance on Yemen's conflict (e.g., EU sanctions regime, US support for peace processes). Show actions such as UN Security Council votes, humanitarian exemptions and involvement in mediation.
- **Project Portfolio** – List large-scale development projects (e.g., Saudi-UAE deposit to CBY, Kuwait's development fund contributions). Provide statuses and impacts.

### 3.3.4 Sanctioned Entities & Individuals

- **Sanction Timeline** – Chart dates of sanction imposition, renewal and removal across jurisdictions (UN, US OFAC, EU, UK). Highlight associated evidence (e.g., financing of the conflict, arms supply).

- **Network Visualization** – Use network graphs to display relationships between sanctioned actors, allied companies and front organisations. Link to the **interconnections** table.
- **Compliance Tracker** – Provide guidance on due diligence requirements, risk indicators, and safe business practices.
- **Impact Analysis** – Show how sanctions affected the actor's financial flows, business operations, and the broader economy (e.g., sanctions on major money exchangers pushed flows into informal hawala <sup>3</sup> ).

### 3.3.5 Microfinance Observatory

- **Loan Portfolio** – Track total loan portfolio, breakdown by micro-enterprise type, and average loan size. Compare to poverty indicators and food basket costs.
- **Client Outreach** – Chart number of borrowers (gender and region). Visualise branches and digital channels (mobile money). Use maps to show financial inclusion gaps.
- **Portfolio Quality** – Display non-performing loan ratios and PAR30/PAR90 metrics. Compare to national averages.
- **Funding Sources** – List donor grants, social investment funds, and institutional deposits; display interest rates charged.
- **Impact Evaluation** – Use surveys or World Bank data to estimate improved income, employment, education or health outcomes among clients.

## 3.4 Event & Timeline Explorer

A timeline tool summarises all events linked to the actor:

- **Policy Moves** – Central Bank circulars, law amendments, regulatory decisions. For CBY, show the bank split in 2016 and subsequent dual operations (dual currencies and different exchange rates).
- **Financial Events** – Capital increases, mergers, takeovers, new branch openings, default events.
- **Sanctions & Compliance** – Imposition, delisting or changes in sanctions. Provide links to official gazettes.
- **Humanitarian & CSR Actions** – Major donations, infrastructure projects, community programmes.
- **Controversies** – Investigations, lawsuits, public criticisms. Link to credible reports.

Each timeline entry should show the event date, brief description, involved actors and a link to detailed documents or articles.

## 3.5 Scenario Simulator & Forecasts

To help decision-makers, each stakeholder page can embed a **scenario simulator** tailored to that actor's levers and exposures. Components include:

- **Counterfactual Analysis** – Allows users to model "what if" scenarios. For a bank, what if they had not relocated to Aden? For a conglomerate, what if port closures persisted? Use historical elasticity estimates and event chains to project alternate outcomes.
- **Future Projections** – Based on the macro scenario engine described in the earlier blueprint, project key indicators (profitability, deposits, FX exposure) under different macro assumptions (oil exports, aid volume, sanctions intensity). Show confidence bands and explanatory notes.

- **Stress Testing** – Evaluate resilience under shocks: further currency depreciation, sudden sanctions, or an aid funding gap. Provide recommended actions (e.g., diversify FX reserves, reduce concentration in high-risk governorates).

### 3.6 Recommendations & AI Q&A

Each page should include a **recommendation panel** with rule-based suggestions and AI-generated insights:

- **Policy Guidance** – If the actor is a bank, highlight regulatory actions needed (e.g., AML compliance, capital adequacy). If a donor, suggest prioritisation of underfunded sectors.
- **Operational Advice** – For companies, recommend diversifying supply chains, adopting digital payments, or investing in renewable energy. For MFIs, emphasise client protection and digital credit scoring.
- **AI Assistant** – Provide an embedded chat assistant that answers questions about the actor using retrieval-augmented generation. The assistant fetches data from the knowledge graph and relevant documents to respond in Arabic or English with citations.

## 4. Sector-Specific Deep Dives & Examples

### 4.1 Central Bank of Yemen (CBY) – Aden & Sana'a

**Objective:** Provide the Governor and Deputy Governor with a comprehensive tool to review the past, monitor the present and model the future.

#### Key Features:

1. **Dual Exchange-Rate Dashboard** – Plot official vs. parallel exchange rates in Aden and Sana'a. Highlight the currency gap (difference between old and new notes) and annotate key policy changes and sanctions events. Include historical and forecast trajectories.
2. **Reserve & Deposit Monitoring** – Show CBY foreign reserves, domestic deposit volumes, and FX auction results. Link to the IMF Article IV report, which notes that the Yemeni rial depreciated by **30 % in early 2025** and that Saudi deposits were used to stabilise the currency <sup>4</sup>.
3. **Payment System & AML Compliance** – Track the adoption of electronic payments, AML reporting rates, and suspicious transaction filings. Provide risk indicators by region.
4. **Policy Simulation** – Allow CBY leaders to test changes in reserve ratios, FX auctions, or currency re-denomination on inflation, exchange rates and banking stress.
5. **Documentation Library** – A repository of all CBY circulars (pre- and post-split) with summaries and analysis.

### 4.2 Commercial Banks (e.g., Tadhamon Bank, CAC Bank)

#### Example Data Points:

- **Assets & Net Profit** – Provide 10-year charts of assets, profit and capital adequacy. If data is scarce due to conflict, use available annual reports or regulatory filings.

- **Loan Portfolio by Sector** – Break down loans by sector (trade, agriculture, housing) and region. Note exposures to high-risk areas.
- **Network & Reach** – Show branch distribution and digital offerings. Many banks relocated from Sana'a to Aden in 2020–21 due to US sanctions and pressure <sup>1</sup>; show this shift on a map.
- **Stress & Risk Indicators** – Use the CBSI and other metrics to show liquidity, NPL ratios, FX mismatch. Link to events such as sanctions on money exchangers and the resulting liquidity squeeze <sup>3</sup>.

#### **4.3 Microfinance Institutions (Al-Kuraimi Islamic Microfinance Bank, Al-Amal Microfinance Bank, Qasemi Islamic Microfinance Bank)**

**Key Focus:** Financial inclusion, outreach, loan performance.

- **Client Reach & Growth** – Chart number of active borrowers, depositors and average loan sizes. Use gender/age segments and regional distribution.
- **Funding Sources** – Display donor programmes (e.g., EU microfinance funds), Islamic finance instruments (murabaha, musharaka) and interbank loans.
- **Impact Metrics** – Use WFP poverty data and household surveys to estimate improvements in income, education, and health outcomes among clients.
- **Challenges & Regulations** – Discuss CBY directives for exchangers converting to banks; emphasise transparency and AML/CTF compliance <sup>3</sup>.

#### **4.4 Major Conglomerates (Hayel Saeed Anam Group – HSA)**

- **Corporate Structure** – Map the group's subsidiaries in food processing, dairy, shipping, textiles, banking, and manufacturing. Show cross-ownership with banks (e.g., involvement in Islamic banking).
- **Financial & Social Impact** – Present revenue and employment trends. Where possible, extract numbers from annual reports (e.g., total employees and payroll). If audited financial statements exist, summarise net income and tax contributions.
- **Resilience & Humanitarian Role** – Describe how HSA maintained food supply chains during blockades and secured international finance. According to the World Bank's private investment report, a **US\$75 million financing package** in 2025 safeguarded jobs and ensured access to nutritious food <sup>2</sup>.
- **Controversies & Accountability** – Mention any antitrust accusations, environmental issues or pricing disputes (e.g., reports that HSA opposed price caps). Detail any sanctions or investigations and the company's response.
- **Counterfactual Simulator** – Provide tools to model how supply chain disruptions or policy interventions could affect HSA's ability to feed millions and maintain employment.

#### **4.5 Donor & State Pages (Saudi Arabia, UAE, Oman, Jordan, US, EU, Qatar, Iran)**

These pages should summarise each country's **financial, diplomatic and military role** in Yemen. Where data exists, highlight:

- **Aid & Investment Flows** – Chart grants, loans, deposits and humanitarian aid. For example, IMF notes that Saudi Arabia provided about **US\$2 billion** in financial support during **2023–24** and announced a **US\$368 million** package in September 2025 <sup>4</sup> <sup>5</sup>.

- **Policy & Diplomacy** – Describe mediation efforts, peace negotiations and political support. Note Oman's role as a mediator and the US/EU's role in sanctions.
- **Economic Interests & Projects** – Detail investments in ports, telecoms, oil/gas, or reconstruction. For UAE, mention involvement in port operations and aid shipments; for Qatar and Iran, summarise widely reported funding of different factions but emphasise that data may be contested and should be critically evaluated.
- **Controversies & Allegations** – Highlight any accusations of involvement in conflict financing or arms smuggling, referencing credible UN Panel of Experts reports where available. When data is scarce or politically sensitive, note limitations and avoid conjecture.

## 4.6 Sanctions Database

Create dedicated pages for **each sanctioned individual or entity**. These should include:

- **Biographical Data** – Names (EN/AR), aliases, nationality, and associated organisations.
- **Sanction Details** – Jurisdiction imposing the sanction, legal basis, date imposed, date lifted, reasons and evidence. Provide links to UN Security Council resolutions, OFAC notices and EU regulations.
- **Asset Map & Network** – Show companies, banks or exchangers controlled by the sanctioned entity. Use network diagrams to display hidden ownership structures and front companies.
- **Impact on Economy** – Estimate how the sanctions affected financial flows and market dynamics. For example, sanctions on money exchangers channelled flows into informal hawala networks <sup>3</sup>.

## 5. Data Ingestion & API Feeds

To populate and refresh these stakeholder pages, the platform should integrate multiple live data sources:

- **Central Bank Feeds** – Exchange rates (official and parallel), reserve levels, bank circulars.
- **OCHA FTS & UN Data** – Humanitarian funding flows, donor contributions, sector allocations.
- **World Bank & IMF Reports** – Download data from WDI, IFS and Article IV updates. Use the World Bank API for macro indicators and the IMF data portal for forecasts.
- **Commercial & Microfinance Banks** – Encourage banks and MFIs to publish quarterly or annual statements via the platform; build scraper scripts for those with accessible PDFs.
- **Company Registries & Stock Exchanges** – For companies with public filings (e.g., HSA subsidiaries abroad), ingest annual reports and audit statements.
- **UN & Government Sanctions Lists** – Regularly crawl UN, US OFAC, EU and UK sanction updates; cross-reference with the actors table.
- **Local News & Think Tanks** – Ingest credible reports from the Sana'a Center, ACAPS and international think tanks, tagging them by actor and theme.

Use a **data validator** to check for consistency, outliers and missing values. Apply cross-triangulation when multiple sources report the same indicator; display ranges when they diverge. Document all transformation steps so that data lineage is auditable.

## 6. Design & User Experience

- **Clear Hierarchy** – Use collapsible panels to move from high-level summaries to detailed tables. Avoid overwhelming users with too much information at once.

- **Intuitive Filters & Search** – Allow users to filter graphs by time, region, currency, sector and scenario. Provide a global search bar with auto-suggestions for actors, indicators, events and documents.
- **Accessible Visualisations** – Use colourblind-friendly palettes, tooltips for data points, and explanatory annotations on charts. Provide CSV/JSON downloads for researchers.
- **On-Page Glossary** – Hover tooltips should define technical terms (e.g., “parallel exchange rate”, “CBSI”). Link to the methods section for deeper detail.
- **Responsive & Offline-Ready** – Ensure pages work on desktops and mobile devices. Provide PDF/print views for offline use.
- **Feedback & Revision History** – Include a feedback form on each page; display a changelog of updates to data or narrative to maintain trust.

## 7. Ethical Considerations & Do-No-Harm

- **Avoid Doxing & Sensationalism** – Do not publish personal information (home addresses, phone numbers) or unverified accusations about individuals. For sanctioned entities, stick to official listings.
- **Conflict Sensitivity** – Remember that Yemen is a war economy; publishing sensitive supply chains or funding sources can have safety implications. Abstract data when necessary (e.g., by sector and time period rather than exact volumes).
- **Privacy & Consent** – Where data is collected directly from stakeholders or banks, ensure that they consent to publication. Respect NDAs and privacy laws.
- **Neutrality** – Present all narratives from an evidence-based and neutral standpoint; avoid taking sides in political disputes.

## 8. Implementation Roadmap (Phase II)

1. **Data Consolidation** – Complete ingestion and cleaning of all accessible reports, datasets and audit statements. Reconcile conflicting figures by cross-reference.
2. **Stakeholder Schema Buildout** – Expand the database to include all identified actors and relationships. Populate with initial profiles and sanctions data.
3. **Page Prototyping** – Build sample stakeholder pages (one bank, one MFI, one conglomerate and one donor state). Use the modular template and refine based on user feedback.
4. **Algorithm Development** – Implement the event-impact engine and scenario simulator for banks and CBY. Use historical data to calibrate parameters.
5. **AI Assistant Integration** – Configure retrieval-augmented generation for each actor, indexing documents and data for targeted Q&A. Provide examples and safety filters.
6. **Beta Testing & Review** – Invite domain experts (economists, bankers, humanitarian workers) and representatives from targeted stakeholders (e.g., CBY, HSA, donors) to test and critique. Iterate based on feedback.
7. **Public Launch & Continuous Improvement** – After refining, roll out to the public with full bilingual support. Monitor usage, update data and expand to remaining stakeholders.

## 9. Conclusion

This blueprint details how to develop rich, actor-specific pages and dashboards that transform the Yemen Economic Compass into a **living, encyclopaedic and analytic brain** for Yemen's economy and finance. By combining narrative depth with live data, scenario modelling and AI-powered assistance—and by grounding every claim in credible sources—the platform will deliver unparalleled transparency, accountability and decision-support to central bankers, company executives, donors, regulators, humanitarian agencies and citizens alike.

Key examples illustrate how to tailor dashboards to banks, conglomerates, MFIs, donors and sanctioned entities. With rigorous data management, ethical considerations, and user-centred design, these pages can set a new global standard for conflict-economy intelligence platforms.

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1 World Bank Document

<https://documents1.worldbank.org/curated/en/099603311122530091/pdf/IDU-9d206bab-c565-4ec7-bc19-914509bc0cdc.pdf>

2 Private Investment

<https://ida.worldbank.org/en/lenses/private-investment>

3 World Bank Document

<https://documents1.worldbank.org/curated/en/099102324070011985/pdf/P177631-d18a7ee4-3fcf-4393-9665-77f98b3e43a7.pdf>

4 5 Yemen: Concluding Statement of the 2025 IMF Article IV Mission

<https://www.imf.org/en/news/articles/2025/10/09/imf-cs-yemen-2025-imf-article-iv-mission>