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Data as a Registry Asset:

Our Journey from Raw Logs to Insights

A case study from .ZA

TechDay, ccNSO, ICANN
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Why Data Matters to Registries



Every registry today is also a data company, whether we admit it or not.



- **Regulatory Reporting Requirements**



- **DNS Abuse Detection and Response**



- **Registrar & Stakeholder Transparency**

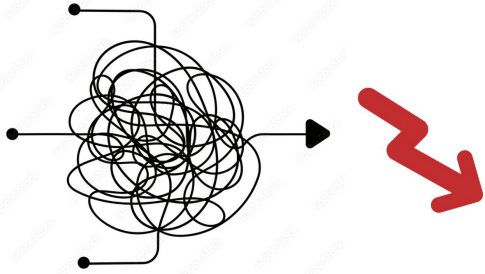


- **Business Intelligence for Decision-Making**



- **Innovation**

Where We Started



Messy Data



**Fragmented
Reports**



**Limited
Insights**

Starting Small with Experimentation



- **Collaboration with University of Pretoria**
- **Capstone Project: BI & Brand Protection tool prototype**
- **Revealed both opportunities and gaps**



From Experiment to Collaboration



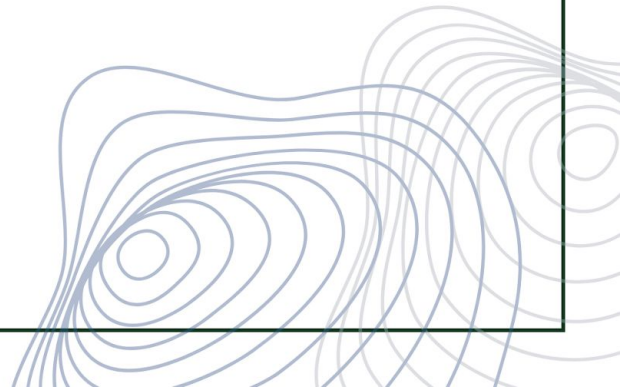
- Identified key talent from the capstone team
- Established TYTO as an analytics partner
- Shared vision: data-driven registry operations



Our Data Warehouse Journey... Why?

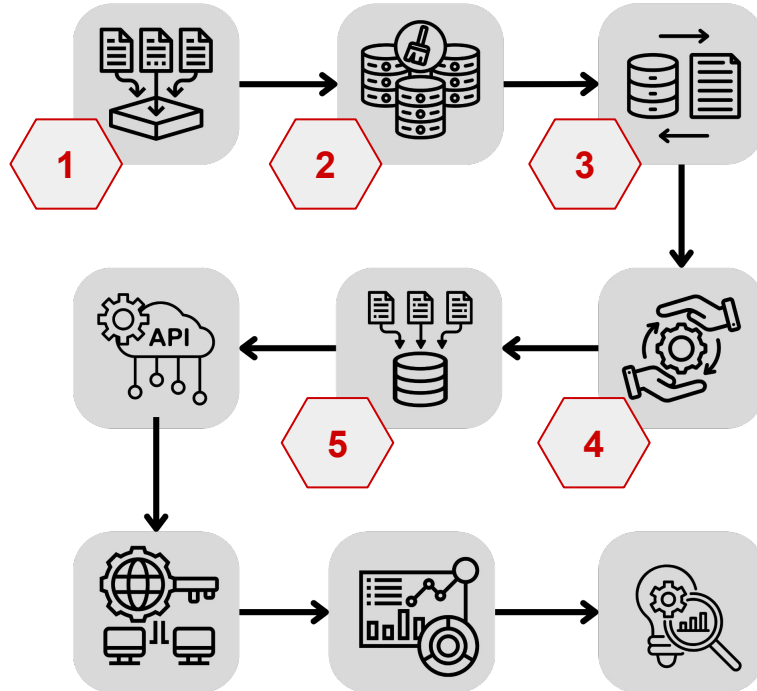


- **Need for Consistent & Reliable Data**
- **Faster, Automated Reporting to the Regulator**
- **Transparency for Registrars**
- **Data-driven Risk Management and Growth Decisions**



From Raw Data to Clean Data

Steps 1–5: Capture → Clean → Transform → Load → Verify

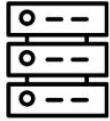


- (1) Rigorous data capture with validation and change control
- (2) Cleaning and reconciling registry logs and billing data. “Golden Rule”: once cleaned, numbers never change
- (3) Transforming and enriching data to optimise analytics and performance
- (5) Loading verified data into a star-schema warehouse. The single source of truth

- **(6) Unified API layer:** one consistent query interface for all stakeholders
- **(7) Role-based access control:** registry, registrar, and regulator views with least-privilege access
- **(8) Dashboards:** focused on clarity, ethical visualisation, and exportable insight



TYTO Collaboration: Enabling an Integrated Analytics Platform



Packaged analytics to operate safely within the registry ecosystem. No data leaves the registry environment, ensuring compliance and operational trust.

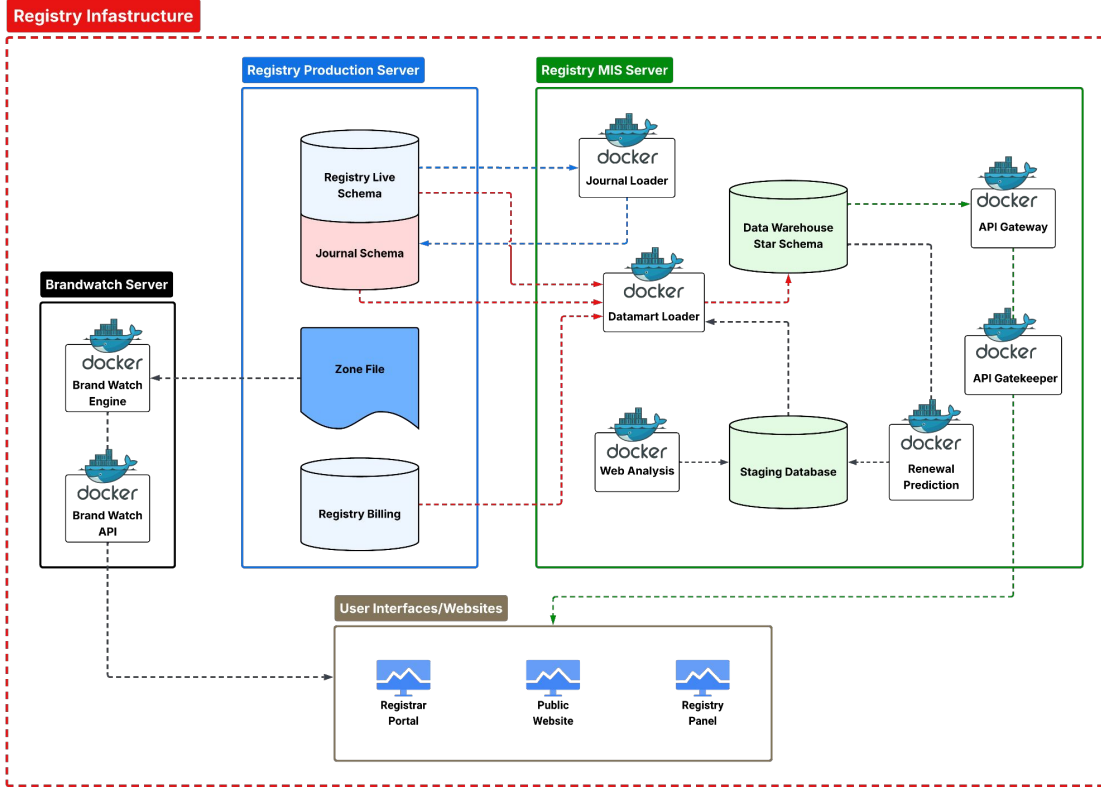


Containerised design enabling modular, secure, and reproducible deployments. Allows easy scaling and maintenance without impacting production.



Scalable platform powering predictive models and real-time insights. Transforms registry data into actionable intelligence within a governed framework.

Registry Infrastructure & Data Flow



Practical Applications of the Data Warehouse



Visualisation & Intelligence:

Registrar dashboards, lifecycle reporting, regulatory summaries

Predictive Analytics:

Renewal forecasting, trend detection, anomaly alerts

DNS Abuse & Compliance:

Integrated monitoring and risk profiling



Auditability & Transparency

Streamlined audit trails, reproducible insights, and data lineage

Brand Watch:

Automated brand-related domain tracking and alerting

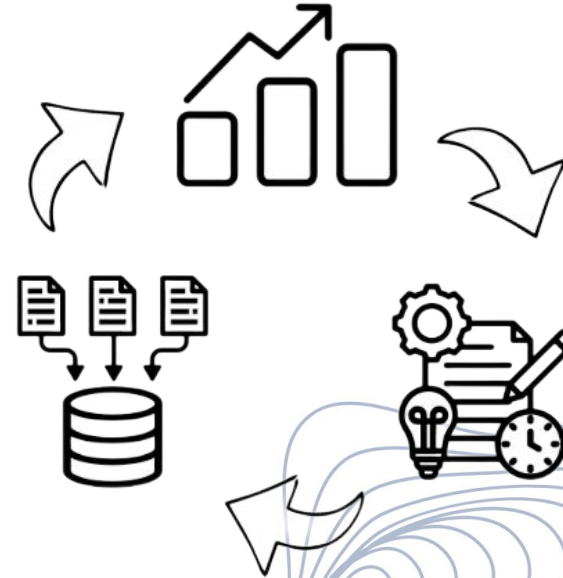
Data Access Services:

APIs for internal teams, registrars, and oversight bodies

What We Achieved



- **Centralised, Trusted Data Warehouse**
- **Faster Regulatory Reporting**
- **Enhanced DNS Abuse Monitoring**
- **Registrar Transparency Tools**
- **Strategic, Data-Driven Planning**



Benefits Beyond Compliance



Compliance



Transparency

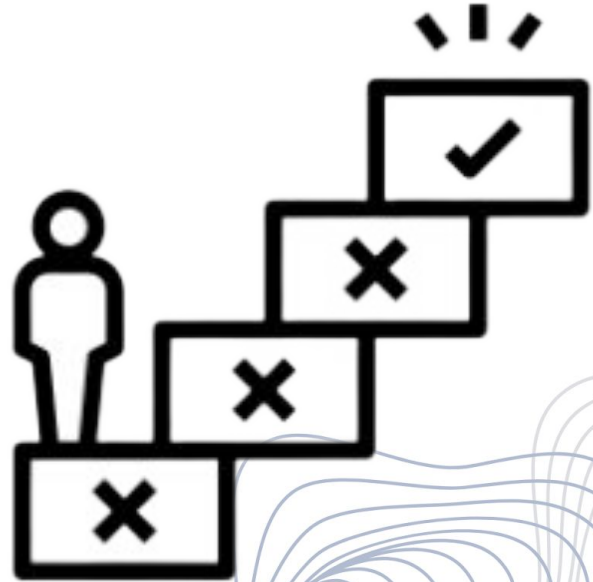


Strategic
Insights

Obstacles Along the Way



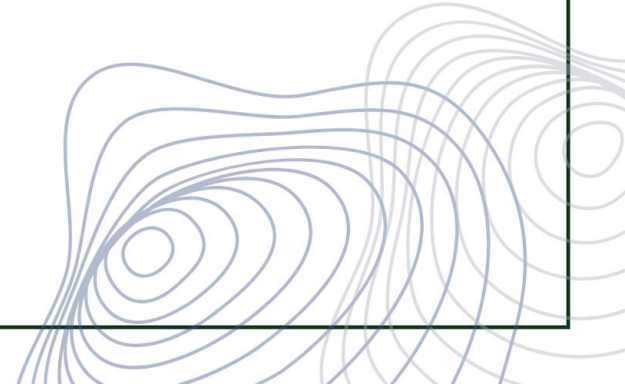
- **Inconsistent Legacy Data**
- **Limited Analytics Skills & Resources**
- **Shifting Organisational Mindset**
- **Bridging Tech and Policy Worlds**



Lessons from Our Data Journey



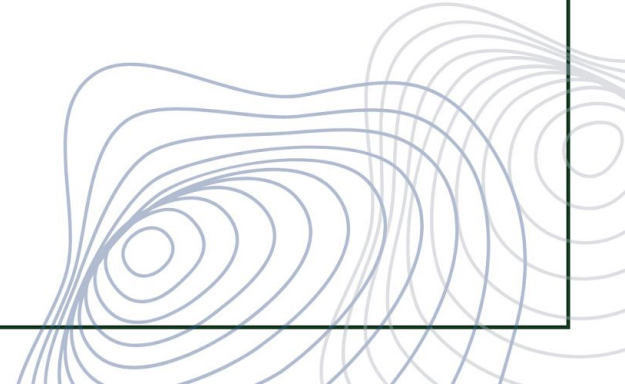
- **Start small, prove the concept**
- **Build partnerships that blend domains and data skills**
- **Invest in processes, not just tools**
- **Treat data as cultural and strategic**



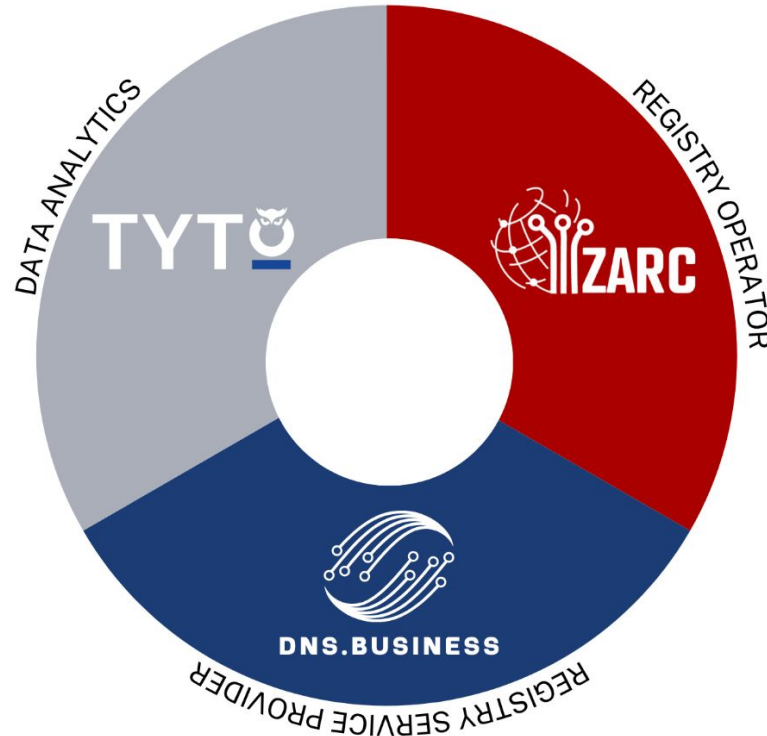
Looking Ahead



- **Predictive analytics and automation**
- **Stronger DNS abuse intelligence**
- **Cross-registry data collaboration**



ZARC & TYTO – A Strategic Collaboration





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GET IN TOUCH

For more information about our Data Journey and Outcomes:

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