

Leveraging Artificial Intelligence and Alternative Data Sources to Bridge Data Gaps

November 20th, 2025



Ibn Sina
980 - 1037

*"العِلْمُ الذي لم يصل إلينا أعظم من العلم الذي
وصل إلينا"*

*"The knowledge that has not reached
us is greater than the knowledge that
has."*

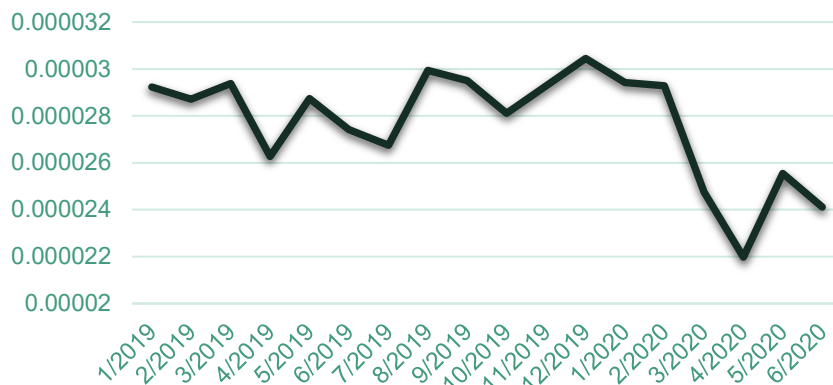
Understanding The Data Gaps

Real GDP growth (Annual percent change)



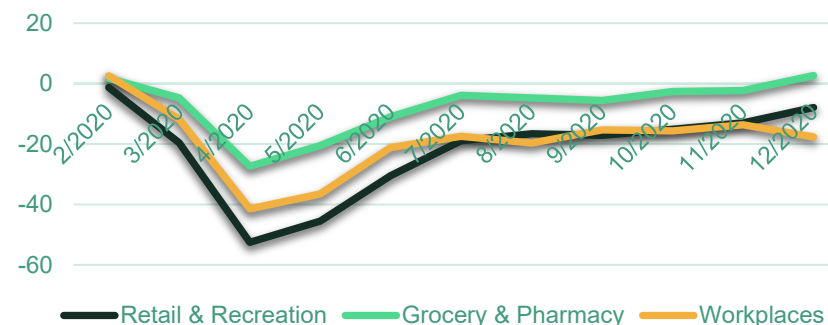
Source: IMF

NO2 Average for AMF countries



Source: AMF staff calculations

Percentage Change from Baseline



Source: Google Mobility Reports

“The Challenge”

Understanding the Data Gaps

Understanding The Data Gaps

Statistics is the “eye” of policy

Undeniable data gaps:

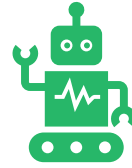
Measure what's easy
not what's essential”



Fast moving shock or
missing data



Data gaps are real: timeliness, granularity and scope.



AI and Alternative data offer practical solution and alternative



Modernize our data ecosystem is not an option



Regional Intelligence Layer



Roadmap: start small, integrate smartly and build capacity



Lead to better decisions, faster crisis response, more inclusive development and see the economy real time as it evolves

Understanding The Data Gaps

**G20 Data Gaps
Initiatives (IMF and
FSB)**

UN Data4Now

**UN SDG Data
Initiatives**

**WB Global Data
Facility**

**WB “Data for Better
Lives”**

**ESCWA Data
Ecosystem and Data
Strategy**

Understanding The Data Gaps

- Define international standards
- Improve data dissemination calendars
- Establish advanced conceptual frameworks (climate, digital finance etc.)
- Enhance institutional coordination
- Work on capacity building



Build the foundation of a structured global data architecture

- Data still arrives too slowly
 - National aggregates mask subnational dynamics
 - Faced with new realities which remain undermeasured: digital activity, informal economies
- **IMF DGI-3** – “Further work is needed to close policy relevant gaps”
 - **UN Statistical Commission** – “To improve existing data sources and increase use of new data sources to expand coverage, relevance and timeliness of data and statistics produced and disseminated by the United Nations system”

Understanding The Data Gaps

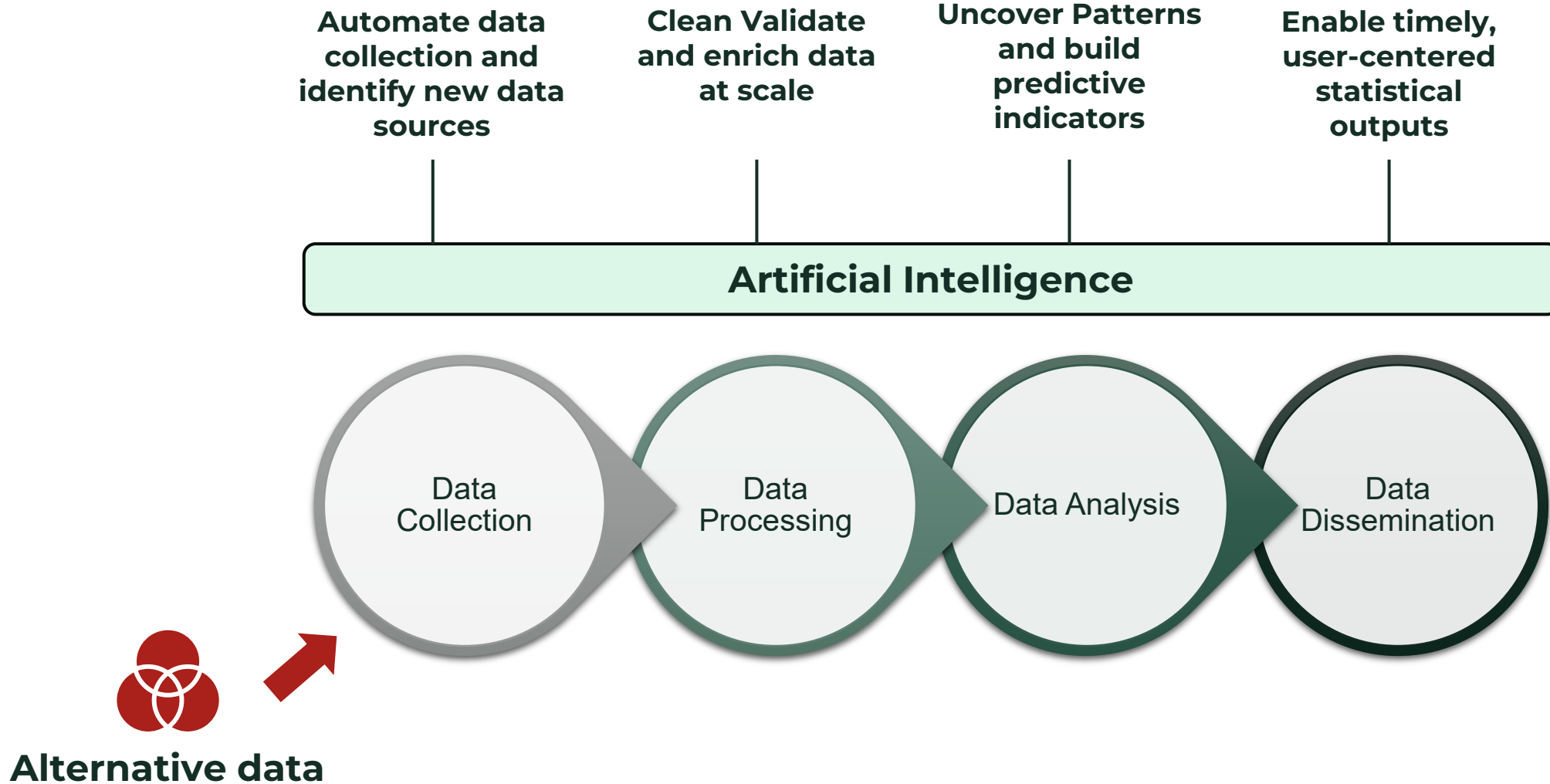


1. The pandemic revealed the lack of timely, granular, and integrated data to support policy responses
2. Policymakers increasingly turned to high-frequency indicators outside the traditional statistical system
3. Progress has focused on frameworks and coordination, but real-time operational capacity remains limited.

“The Transformation”

What AI and Alternative Data Can Offer

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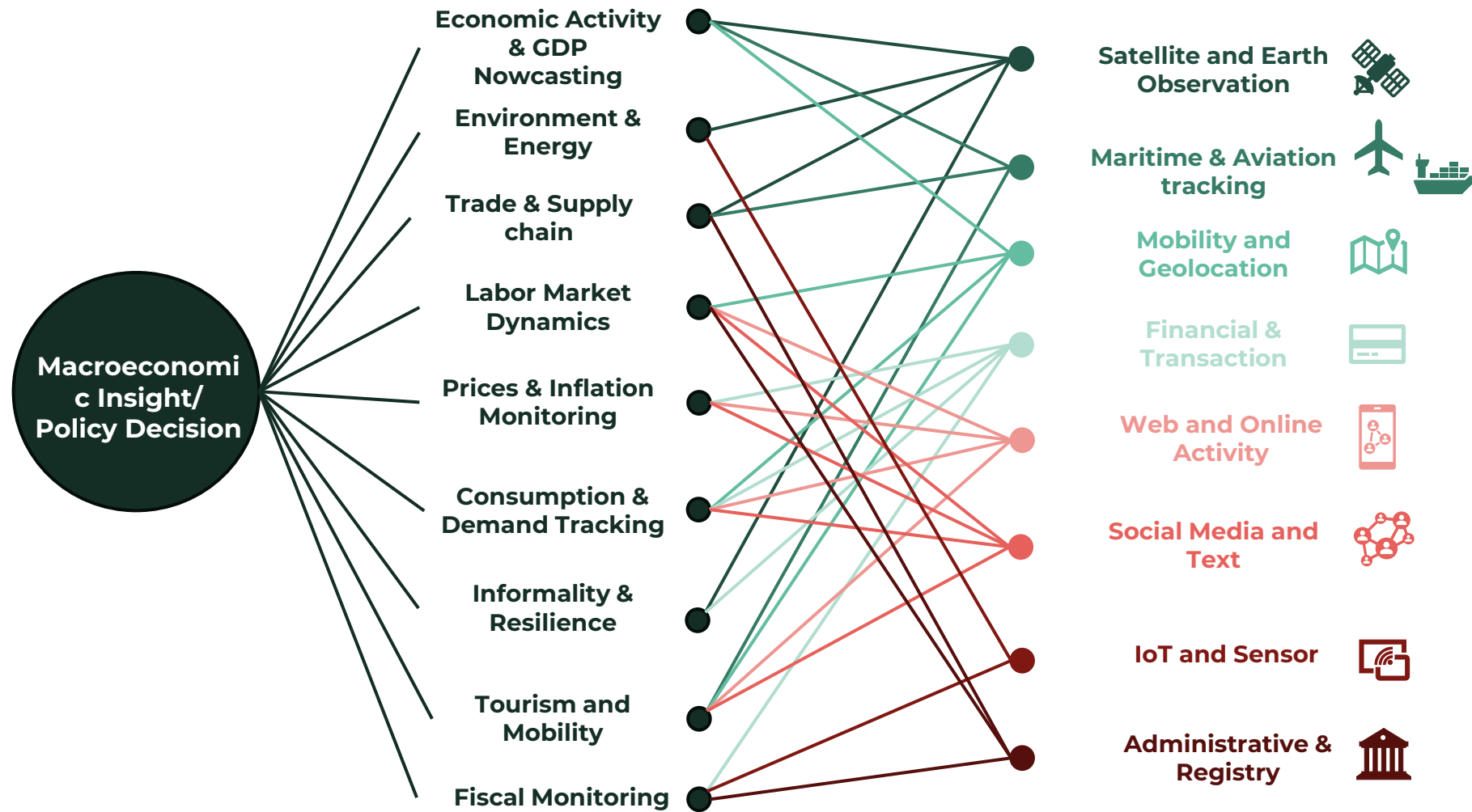


Understanding The Data Gaps



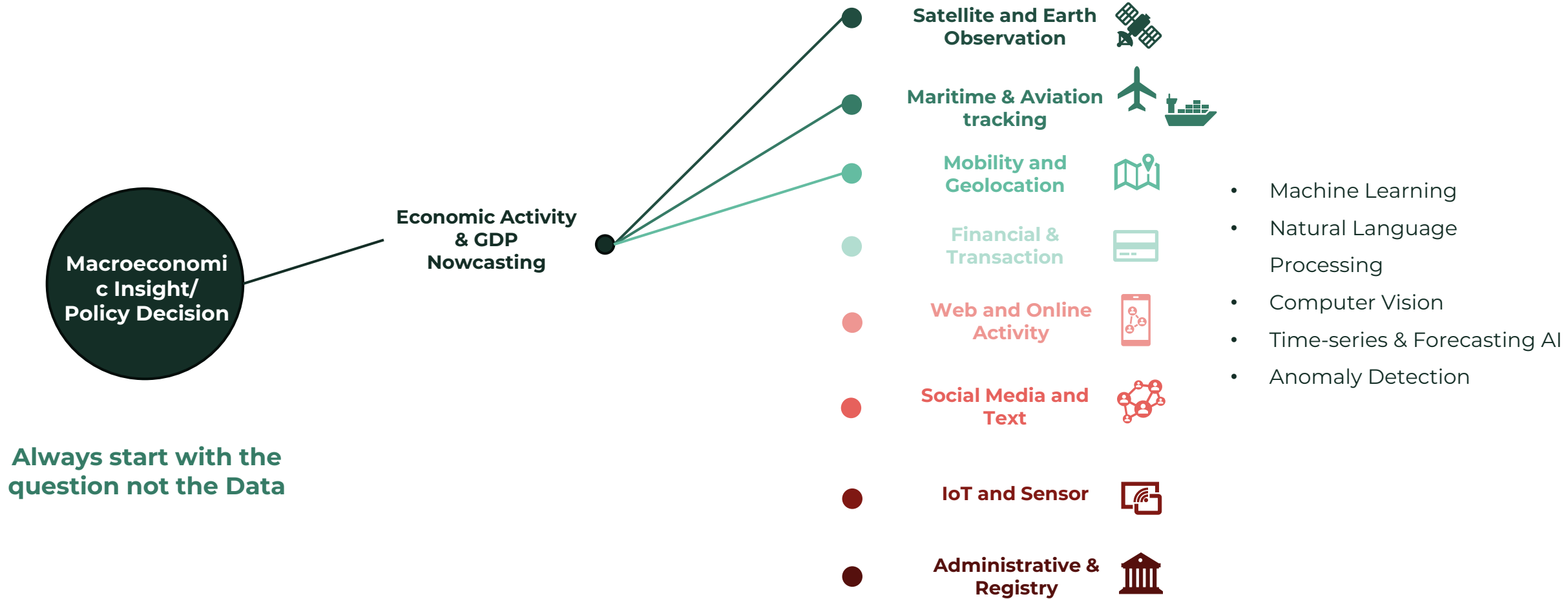
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What AI and Alternative Data Can Offer



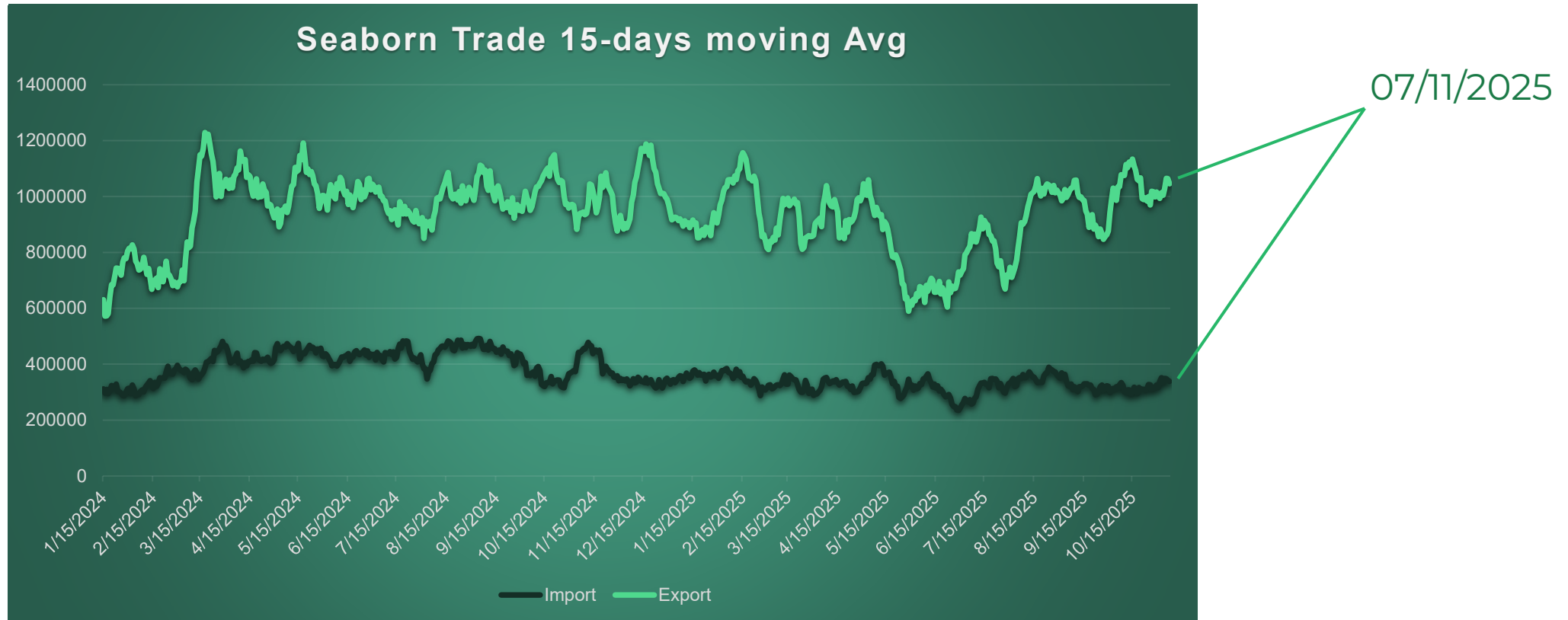
- Machine Learning
- Deep Learning
- Natural Language Processing
- Computer Vision
- Generative AI
- Time-series & Forecasting AI
- Anomaly Detection
- Reinforced Learning
- Representation Learning
- Graph-Based AI
- Self-Supervise Learning
- Optimization and Heuristic AI
- Causal Inference
- Synthetic data generation

What AI and Alternative Data Can Offer



What AI and Alternative Data Can Offer

- A new **Pandemic** or a **Natural Disaster** hit, and I want to monitor the impact on trade
- Data for country A stops at August 2025
- Using Alternative Data (AIS) and AI can help nowcast seaborne trade



What AI and Alternative Data Can Offer

Global

- UNSD/UNECE – Results of the UNSD/UNECE Survey on organizational context and individual projects of Big Data – Feb 2015 → **57** Big Data projects.
- UN Statistics Division – Report of the 10-year review on the use of Big Data and Data Science for Official Statistics – Feb/March 2024 → **87** NSOs and **17** IOs.
- Financial Stability Board – Monitoring Adoption of Artificial Intelligence and Related Vulnerabilities in the Financial Sector – October 2025 → AI monitored by **19** jurisdictions.

Regional

- | | | |
|--|---|---|
| ESCWA : Big-data pilot for price collection (web scrapping and scanner data) | → | Tested real-time CPI proxies for countries lacking monthly data |
| GASat: Integrating population estimation using satellite and mobile data | → | Closed intercensal data gap; improved spatial granularity |
| FCSA: Smart energy and fuel statistics using IoT feeds | → | Enabled near real-time indicators on consumption and emissions |

“The Opportunity”

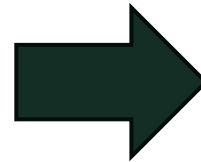
From National Silos to Regional
Intelligence

From National Silos to Regional Intelligence

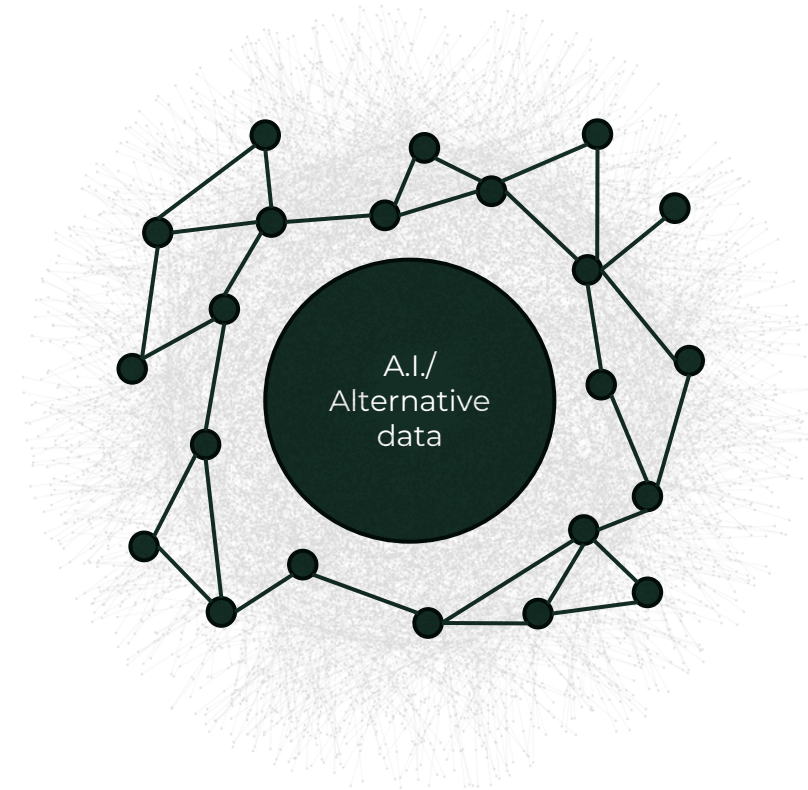
- National progress is accelerating
- We already have institutional foundations
- Abundance of alternative data to tackle missing data, timeliness, coverage, scope etc.
- AI is helping to turn these new signals into meaningful insight

ArabStat

Fragmented National Innovation



Shared data → Shared intelligence → Shared resilience.



“The Roadmap”

From Concept to Action

From Concept to Action



Pilot & Learn

- Launch pilot projects (Trade/GDP nowcasting etc.)
- Use AI and Alternative data with clear validation quality check process against official data
- Build national sandbox environment for experimentation



Connect and Standardize

- Interconnect data systems via APIs, metadata standards and ensure data protocols
- Focus on collaboration and peer learning
- Work on regional guidelines for using alternative data ethically and consistently



Scale and Integrate

- Integrate high-frequency AI driven indicators into official statistics
- Combine traditional and alternative sources as complimentary proxies and early warning signals
- Work together to become a global model for data-driven macroeconomic intelligence

“The Impact”

What Success Looks Like

What Success Looks Like

Progress has focused on framework and definitions, not real-time observation... future lies in complementing traditional systems with AI and alternative data

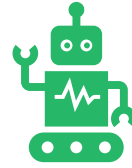
Transform the data ecosystem into one that is integrated, automated and innovative

AI applications in official statistics can enhance data quality, reduce latency and bridge information





Data gaps are real: timeliness, granularity and scope.



AI and Alternative data offer practical early-warning signals



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“The best way to predict the future is to invent it” – *Alan Key (Computer Science Pioneer)*

“All models are wrong, but some are useful” – *George Box (Statistician)*

Thank You