



EBOOK

# Trusted, AI-Ready Data for **Modern Government** **Agencies** in ASEAN

Empowering Secure, Resilient, and Intelligent  
Public Sector Missions



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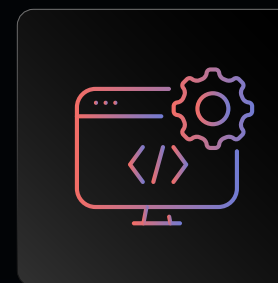
## CHAPTER 1:

# INTRODUCTION

A variety of external and internal forces are reshaping ASEAN governments, and it's critical for public sector institutions to adjust to these changes now, before they risk falling behind in the race to build modern, AI-ready systems.

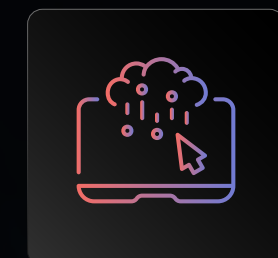
## External Forces

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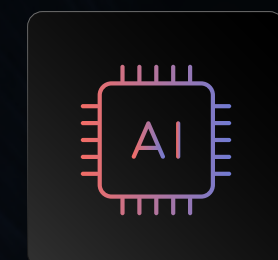
### **Rising citizen expectations for digital-first services**

Citizens expect seamless, mobile, always-on public services comparable to private-sector digital experiences.



### **Regional integration & climate resilience**

Cross-border coordination, disaster response, and rapid urbanisation require secure, real-time data sharing across agencies and national boundaries.



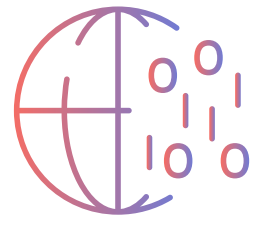
### **Growing adoption of AI in public services**

AI initiatives require governed, explainable data to deliver outcomes without eroding trust.

On the next page we'll look at some of the **internal** forces.

# Internal Forces

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## **Fragmented legacy systems**

Disconnected systems prevent unified insight and slow mission-critical decision-making.



## **Data sovereignty, privacy, compliance, and audit**

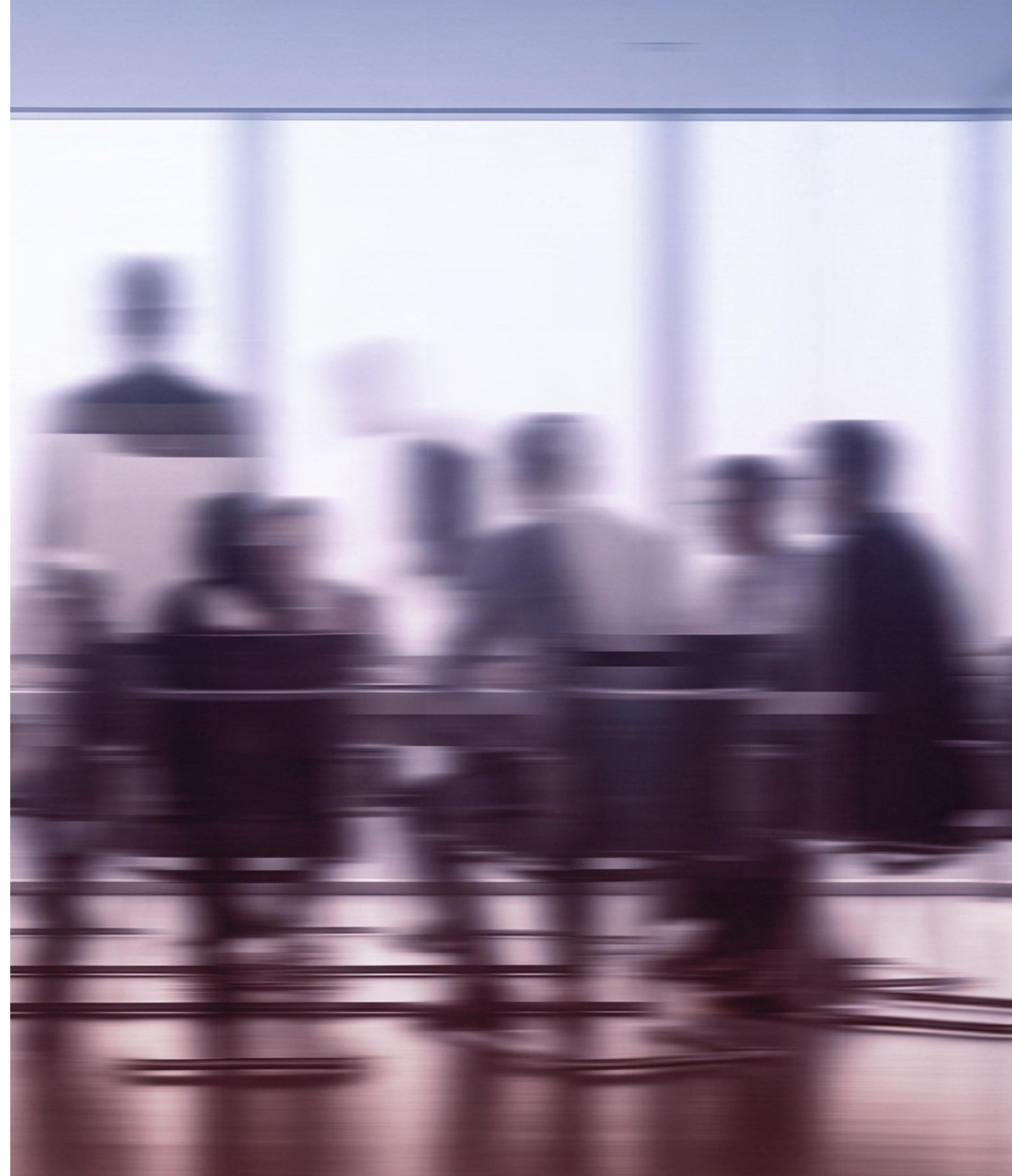
New regulations — including Singapore's PSGA amendments and Vietnam's Law on Data — formalize structured data governance and controlled cross-agency sharing under strict accountability requirements.



## **Operational pressure and rising accountability**

Agencies must deliver more, with fewer resources, while enabling traceable, policy-compliant data access.

Together, these external and internal forces create a moment of urgency — and opportunity — for ASEAN governments.





# Today's Barriers to Modern Government

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However, transformation is not trivial, and there are several reasons for this.

## WHY TRANSFORMATION STALLS

- Data is trapped in silos across agencies and platforms.
- Integration is slow, and there are many duplicated data pipelines.
- Data governance is inconsistent, and despite new data-sharing laws, access controls across agencies and partners are not seamless.
- Analytics and AI initiatives are built on incomplete data.

**ASEAN Reality:** These barriers directly impact emergency response, citizen services, and regional coordination.

A woman with dark hair is shown in profile, looking upwards and to the right with a thoughtful expression. Her hand is near her chin. The background is a dark, out-of-focus city scene at night, with many circular bokeh lights in shades of blue, purple, and pink. On the far left, a portion of a digital screen with green and red data is visible.

CHAPTER 2:

## **ONE LOGICAL DATA PLATFORM**

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Fortunately, there is a solution, and it doesn't require a replacement of any existing data infrastructure. It's called the Denodo Platform, and it leverages logical data management capabilities that do not require data to be replicated before it can be accessed or leveraged. Let's explain, at a glance, how this works:

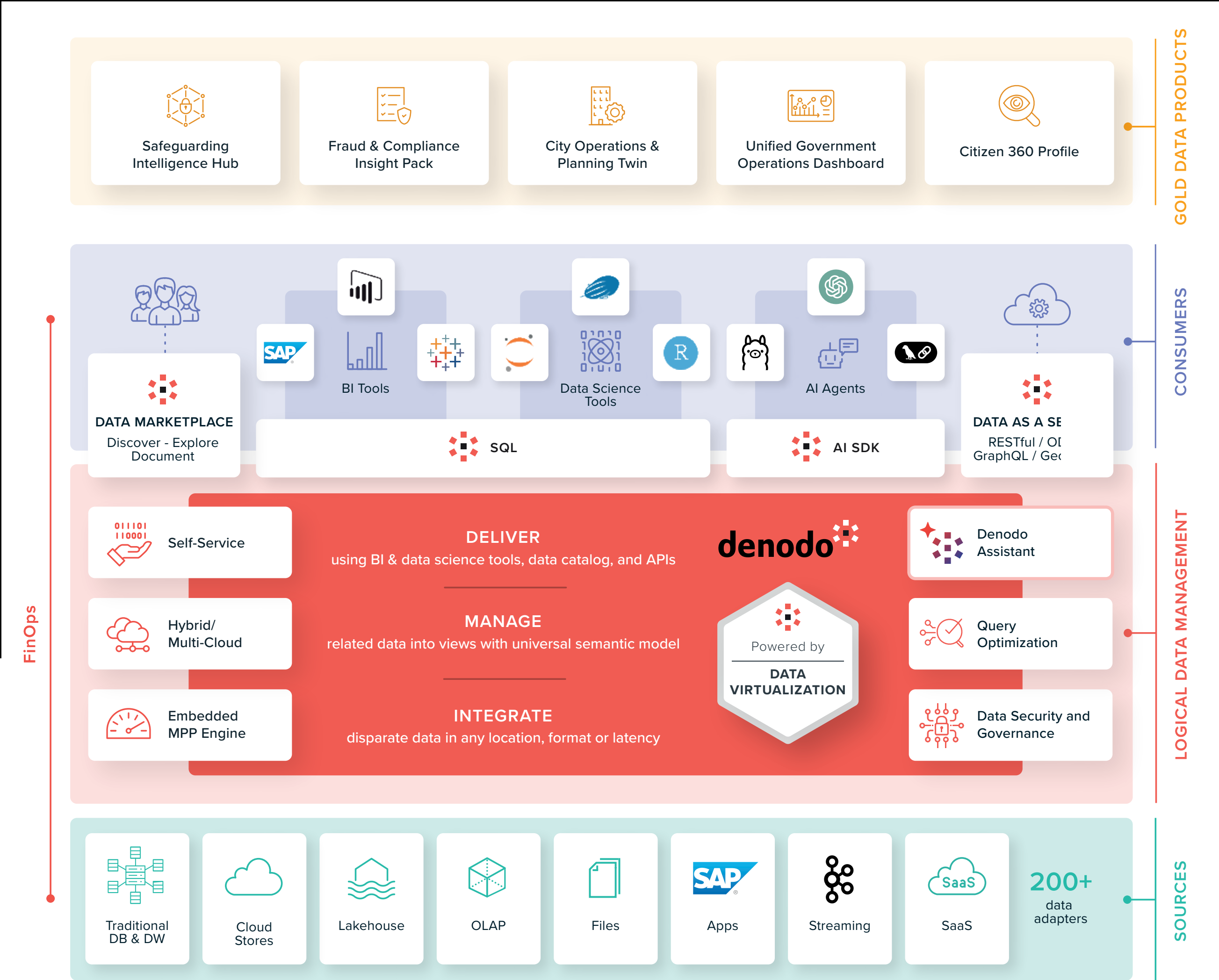
**Bottom:** Government data sources  
ERP, case systems, citizen registries, GIS, IoT, cloud, SaaS, and open data.  
Denodo connects without copying or moving data.

**Middle:** Denodo’s logical data layer (the core)  
Data is integrated in real time, unified with consistent business meaning, and governed centrally across agencies.

**Top:** Secure data delivery  
Governed data is delivered via SQL, APIs, and AI services to dashboards, analytics, AI agents, and digital services.

**OUTCOME:** Data Products  
Reusable products such as Safeguarding Intelligence, Fraud & Compliance, City Operations Twins, Unified Operations Dashboards, and Citizen 360.

**RESULT:** Faster decisions and secure data sharing without rebuilding systems.



Let’s explore data products further in the next chapter.

CHAPTER 3:

# **DATA PRODUCTS: TURNING GOVERNMENT DATA INTO ACTIONABLE INSIGHT**

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How Data Products Create Public Value





## DATA PRODUCTS

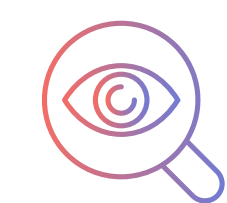
- Transform fragmented governmental data into reusable, secure, governed assets that drive policy, improve operations, and deliver citizen-centric services.
- Make available standardised, interoperable datasets that support cross-agency collaboration and statutory reporting.

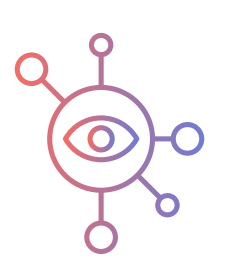
## WHY THEY MATTER

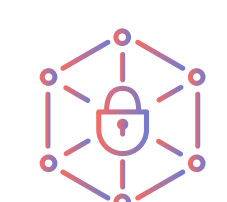
- Reusable across departments and missions
- Governed & audit-ready
- AI-ready
- Accelerate transformation without replacing legacy systems

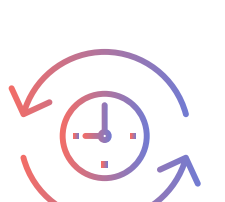
# Data Products

Here are just some of the many data products that can be developed in ASEAN to help transform public sector organizations:

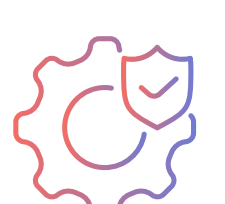
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**Citizen 360 Profile**  
A unified view of resident interactions, eligibility, case history, benefits, and service usage
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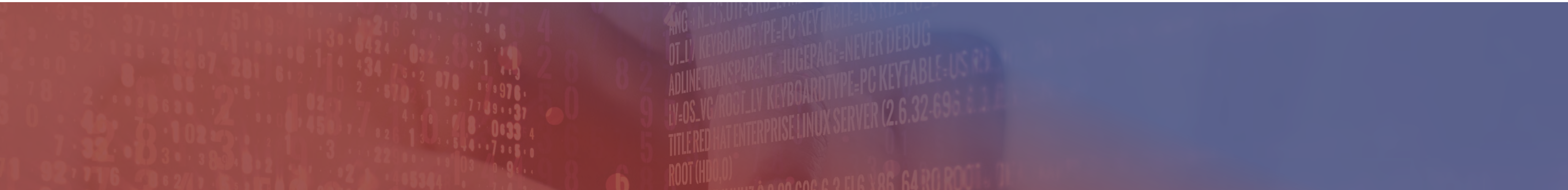
**Grants, Subsidies, and Funding Intelligence Pack**  
Unified view of applications, eligibility, fraud indicators, disbursements, and impact tracking
- 

**Safeguarding & Vulnerability Detection Feed**  
Real-time indicators from social care, policing, education, and health to identify at-risk individuals and support early intervention
- 

**Emergency Services Real-Time Operations Feed**  
Integrated dispatch, incident, geographic information systems (GIS), Internet of Things (IoT), and resource-availability data for police, fire, and medical
- 

**Compliance, Audit, and ESG Reporting Kit**  
Governed datasets for freedom of information (FOI) responses, regulatory submissions, sustainability metrics, and performance reporting
- 

**Fraud, Error, and Debt Detection Layer**  
Combines payments, claims, benefits, tax, and case data to surface anomalies and prevent loss In the next few chapters, we'll look at how a variety of data products can be established to meet different use cases.





CHAPTER 4:

## **SAFEGUARDING AND PUBLIC PROTECTION**

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Denodo's real-time logical and governed data views enable agencies to spot risks faster and act on unified social, health, and emergency signals.

## DRIVERS

- Fragmented data across police, social services, healthcare, education
- Slow multi-agency, intra-agency and partner information sharing, even with new legal frameworks promoting trusted data sharing (e.g., Singapore's PSGA amendments)
- Rising caseloads and public safety demands

## DATA SOURCES

- Police systems
- Social Care
- Education
- Housing
- Healthcare
- Emergency Response

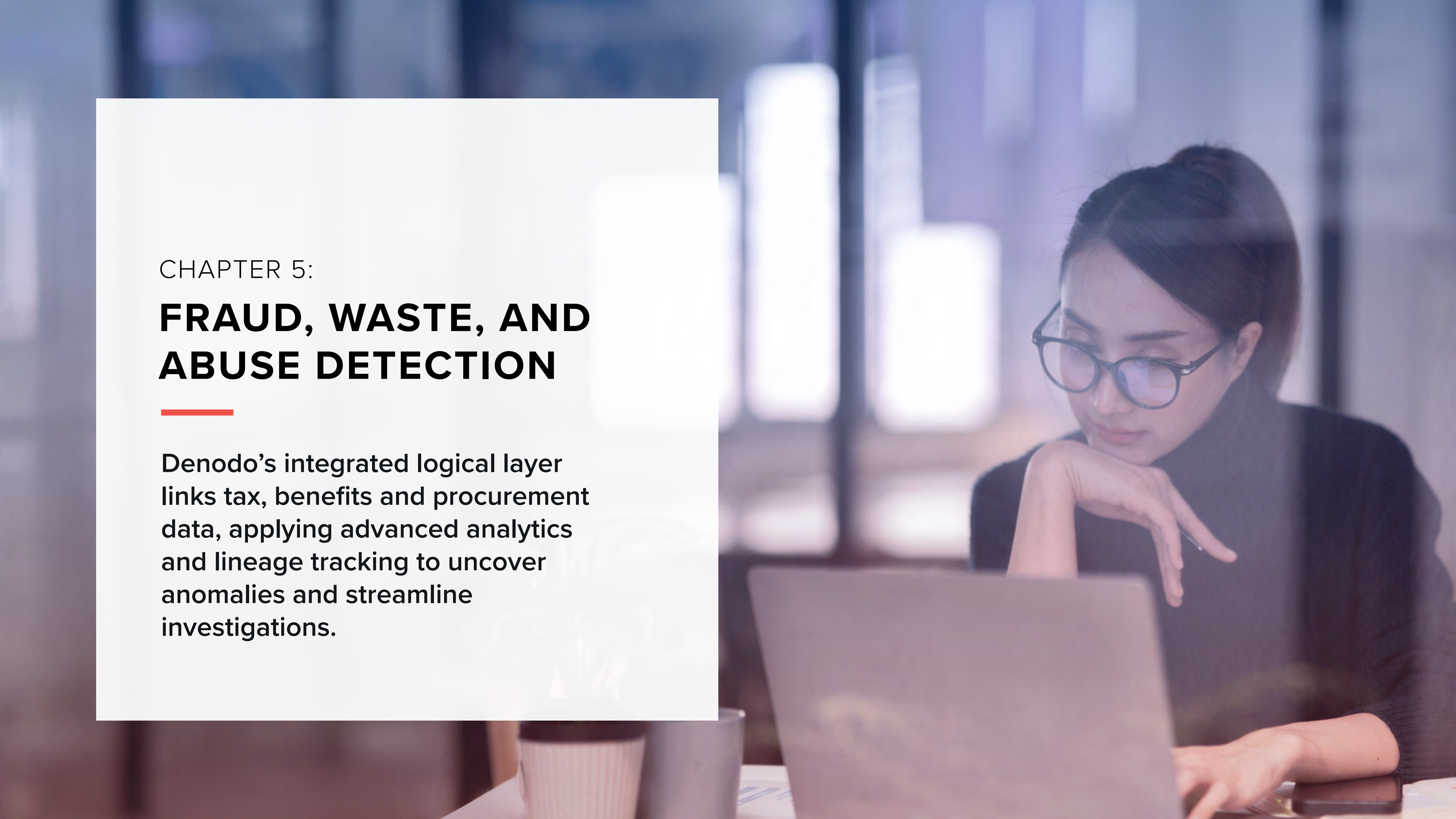
## DATA PRODUCT

“Safeguarding Intelligence Hub” — real-time cross-agency risk and intervention view.

## OUTCOMES

- ✓ Earlier detection of risk
- ✓ Faster multi-agency and intra-agency coordination
- ✓ Reduced harm and stronger community safety



A woman with dark hair tied back, wearing glasses and a dark turtleneck, is sitting at a desk and looking at a laptop. Her hand is resting on her chin in a thoughtful pose. The background is a blurred office environment with large windows and indoor plants.

CHAPTER 5:

## **FRAUD, WASTE, AND ABUSE DETECTION**

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Denodo's integrated logical layer links tax, benefits and procurement data, applying advanced analytics and lineage tracking to uncover anomalies and streamline investigations.

## DRIVERS

- Inefficient processes in benefits, procurement, tax, and identity fraud, leading to possible wastage of resources
- Siloed financial & citizen data
- Auditor pressure for transparency

## DATA SOURCES

- Tax
- Grants and Benefits
- Procurement
- Identity
- Banking partners
- GIS



## DATA PRODUCT

“Fraud & Compliance Insight Pack” — Integrated fraud-risk indicators, anomaly detection, and compliance signals to support faster, more accurate investigations

## OUTCOMES

- ✓ Faster detection and investigation
- ✓ Reduced financial leakage
- ✓ Stronger audit confidence

CHAPTER 6:

# SMART CITIES AND URBAN PLANNING

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Denodo's integration of IoT streams, GIS maps and citizen data in one semantic layer lets planners simulate and optimize traffic, utilities and sustainability without unnecessary data duplication.



## DRIVERS

- Traffic congestion and housing demands
- Real-time environmental and mobility data
- Capital program planning

## DATA SOURCES

- IoT
- Traffic systems
- Mobile data
- GIS
- Utilities
- Environmental feeds

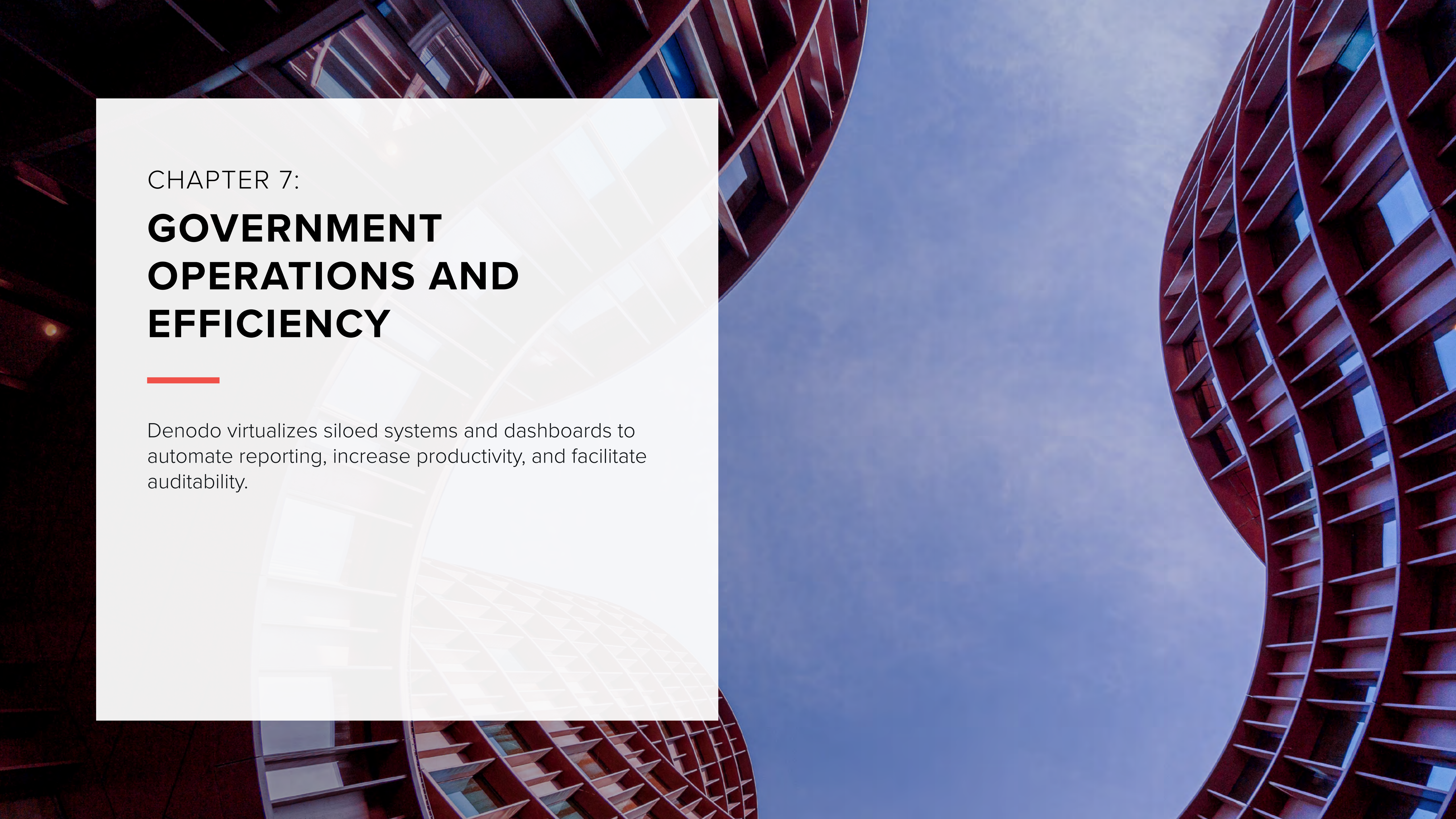
## DATA PRODUCT

“City Operations & Planning Twin” – Real-time view of city services, assets, and operations for better planning

## OUTCOMES

- ✓ Smarter transport decisions
- ✓ Reduced congestion
- ✓ Better sustainability planning





CHAPTER 7:

# GOVERNMENT OPERATIONS AND EFFICIENCY

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Denodo virtualizes siloed systems and dashboards to automate reporting, increase productivity, and facilitate auditability.

## DRIVERS

- Expanding regulatory need for real-time cost, asset, and program oversight
- Siloed dashboards and agency-specific reports limiting a unified view
- Audit & performance pressure

## DATA SOURCES

- ERP & Finance
- Procurement
- HR & Case Systems
- Grants

## DATA PRODUCT

“Unified Government Operations Dashboard” - real-time, cross-agency view of operations, services, and performance to support faster, data-driven decisions

## OUTCOMES

- ✓ Faster reporting
- ✓ Lower operational cost
- ✓ Improved accountability



CHAPTER 8:

## **CITIZEN 360 AND DIGITAL SERVICES**

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Denodo's secure, governed views consolidate case histories, service interactions, and channel data, enabling personalized digital services while preserving privacy and consent.



## DRIVERS

- Rising citizen service expectations
- Fragmented case histories
- Multi-agency service journeys
- Need for a single pane of glass view of services, and central platforms for data exploration.

## DATA SOURCES

- Citizen registry
- Case systems
- CRM
- Contact center
- Open Data

## DATA PRODUCT

“Citizen 360 Profile” – unified view of each resident’s interactions, eligibility, cases, and service usage

## OUTCOMES

- ✓ Faster service resolution
- ✓ Personalized digital services
- ✓ Reduced administrative burden



CHAPTER 9:

## CUSTOMER STORIES

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Denodo is leveraged by a wide variety of organizations across the globe. In this chapter, we'll focus on three snapshots: The Italian National Institute of Statistics (Istat), Pantex Plant (U.S. Department of Energy), and a department of finance in a Middle-Eastern government.



## CUSTOMER STORY SNAPSHOT:

# The Italian National Institute of Statistics (Istat)

Modernizing Italian national statistics with a unified, governed data foundation

## CHALLENGE

- Istat needed to modernize fragmented survey, administrative, register, and emerging data spread across disparate systems.
- Siloed data slowed integration, complicated governance, and limited secure self-service access.

## SOLUTION WITH DENODO

- Unified all data via a logical access layer
- Delivered secure, self-service access for researchers
- Standardized meaning with shared dictionaries/registers
- Strengthened governance with lineage and permissions
- Built a foundation for future expansion (cataloging, RAF)

## IMPACT

- ✓ Gained the ability to produce higher-quality statistics
- ✓ Reduced costs and manual collection effort
- ✓ Accelerated rollout of new surveys
- ✓ Enabled broad self-service access for researchers
- ✓ Strengthened data governance
- ✓ Modernized the data infrastructure



## CUSTOMER STORY SNAPSHOT:

# Pantex Plant (U.S. Department of Energy)

Sharing sensitive information across facilities to maintain the nuclear weapons stockpile

## CHALLENGE

- Impeded data sharing within and across facilities — different legacy systems and applications stored data in multiple formats, making information difficult to share
- Delayed data delivery due to lack of a central repository, overnight file extracts, and reliance on emails and manual processes
- Governance challenges due to document-based information sharing, lack of version control, and limited data lineage
- Security challenges, with data in transit susceptible to breaches across multiple facilities

## SOLUTION WITH DENODO

- Established an Integrated Digital Environment (IDE) to provide unified access to weapon lifecycle data across facilities

- Leveraged Denodo data virtualization to set up virtual data marts for downstream users
- Integrated data from source systems and published it as secure SOAP web services for access by laboratory engineers
- Enabled users to query data through an information portal without impacting source systems

## IMPACT

- ✓ Saved \$600,000 in only three months of production as part of the PRIDE project
- ✓ Achieved a 15% return on investment after three months in production
- ✓ Reduced training, licensing, and maintenance costs
- ✓ Reduced project cycle times through timely sharing of data and lowered risk through better security



## CUSTOMER STORY SNAPSHOT:

# A Department of Finance in a Middle-Eastern Government

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Strengthening government-wide financial compliance with a unified, AI-ready data foundation

## CHALLENGE

- Fragmented financial and legal data
- Manual oversight couldn't scale across 60+ entities
- No automation between laws and workflows
- Needed governance to meet Emirates cyber standards

## SOLUTION WITH DENODO

- Unified financial, legal, and operational data
- Enabled GenAI-powered legal mapping
- Delivered real-time compliance monitoring
- Replaced manual audits with AI-driven insights



## IMPACT

- ✓ Gained a real-time, governed, compliance platform
- ✓ Automated oversight across 60+ entities.
- ✓ Reduced manual audit effort
- ✓ Deployed AI-augmented public finance governance models
- ✓ Built a scalable foundation for broader Emirates adoption.



# Take the **Next** Step

Start your journey toward trusted, AI-ready data for ASEAN government agencies. Build resilience, speed, and intelligence with Denodo.

Your data already holds the power to transform how you operate, innovate, and serve. All it needs now is the right foundation.

Discover how Denodo can help your organization to modernize its data foundation, accelerate AI initiatives, and deliver trust at every level of your business.

**Schedule your strategy session with a Denodo expert.**

**SCHEDULE IT NOW**

**Let's build the foundation for AI-ready government, together.**