



# Dublin Cloud Day

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DCD - B6

# Building an Enterprise Data & Analytics Platform in AWS – From 1 to 100 teams

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# A suggested definition

An **agile** plan of **aligned** actions spanning mindset, people, process, and technology that **accelerates** creating value using data in **direct support** of strategic business objectives

**( Mindset + People + Process )**  
**x Technology**

# Using a modern data strategy to become a data-driven organization



## Mindset

Beliefs, values, and behaviors that create a data-driven culture with aligned use-cases



## People / Process

Structure and roles that accelerate data-driven outcomes and processes that enable and scale effective use of data



## Technology

A North Star vision for a future data architecture to support priority use-cases



## Mobilize

Execution approach and tools to rapidly unleash the value of data by deploying innovations

# ( Mindset + People + Process ) x Technology

An agile plan of aligned actions spanning mindset, people, process, and technology that accelerates creating value using data in direct support of strategic business objectives



## Mindset



## People & Process



## Technology

Modern

Product  
centric

Customer  
focused

Cross  
functional

Autonomous

Federated and  
agile

Purpose fit,  
flexible,  
scalable

Traditional

Platform  
centric

Solution  
first

Technology  
only

Monolithic  
departments

Centralized  
control

Monolithic  
platforms

# Karl Heery

VP of Technology, Digital Delivery Capabilities  
Aon Technology



# Aon is in the business of better decisions

Aon exists to shape decisions for the better — to protect and enrich the lives of people around the world. Our colleagues provide our clients in over 120 countries and sovereignties with advice and solutions that give them the clarity and confidence to make better decisions to protect and grow their business.

## 50,000

colleagues around the world

## 120+

countries and sovereignties with Aon clients

Through our experience, global reach and state-of-the-art analytics, we are better able to help clients meet rapidly changing, increasingly complex and interconnected challenges across four areas of need:

Navigating new forms of volatility

Building a resilient workforce

Rethinking access to capital

Addressing the underserved

## Commercial Risk Solutions

Shifts in technology, economics and geopolitics are creating unprecedented volatility. We help clients identify, measure and manage their risk exposure.

### \$110B+

of bound premium placed annually

## Health Solutions

Health is declining, costs are rising and workers have vastly different needs. We help companies improve employee health and wellbeing while managing costs.

### \$35B

of bound premium placed annually

## Reinsurance Solutions

Businesses, governments and communities need to become more resilient. Our expertise and insight help (re)insurers navigate uncharted territories and create more relevant solutions.

### \$50B+

of bound premium placed annually

## Wealth Solutions

Global business is becoming increasingly difficult to navigate. We help employers, fiduciaries and investment officers optimize results and provide a more secure future for their stakeholders.

### \$3.8T<sup>2</sup>

of assets under advisement

<sup>1</sup>Includes approximately \$55B of captive premium.

<sup>2</sup>As of 6/30/2022, includes non-discretionary assets advised by Aon and its global affiliates which includes retainer clients and clients in which Aon and its global affiliates have performed project services for over the past 12 months. Project clients may not currently engage Aon at the time of the calculation of assets under advisement as the project may have concluded earlier during preceding 12-month period.

# Ensuring every Aon client is better informed, better advised and able to make better decisions



## Better Informed >

- State-of-the art data & analytic capabilities
- Breadth and depth of industry expertise
- Proven methodology to discover client needs



## Better Advised >

- Collaborative, hands-on approach
- Linking innovative insights to client needs
- Developing solutions in partnership



## Better Decisions

- Delivery of integrated solutions
- Tailored client experience and service
- Practical execution for maximum impact





# The business case for shared Data & Analytics capabilities

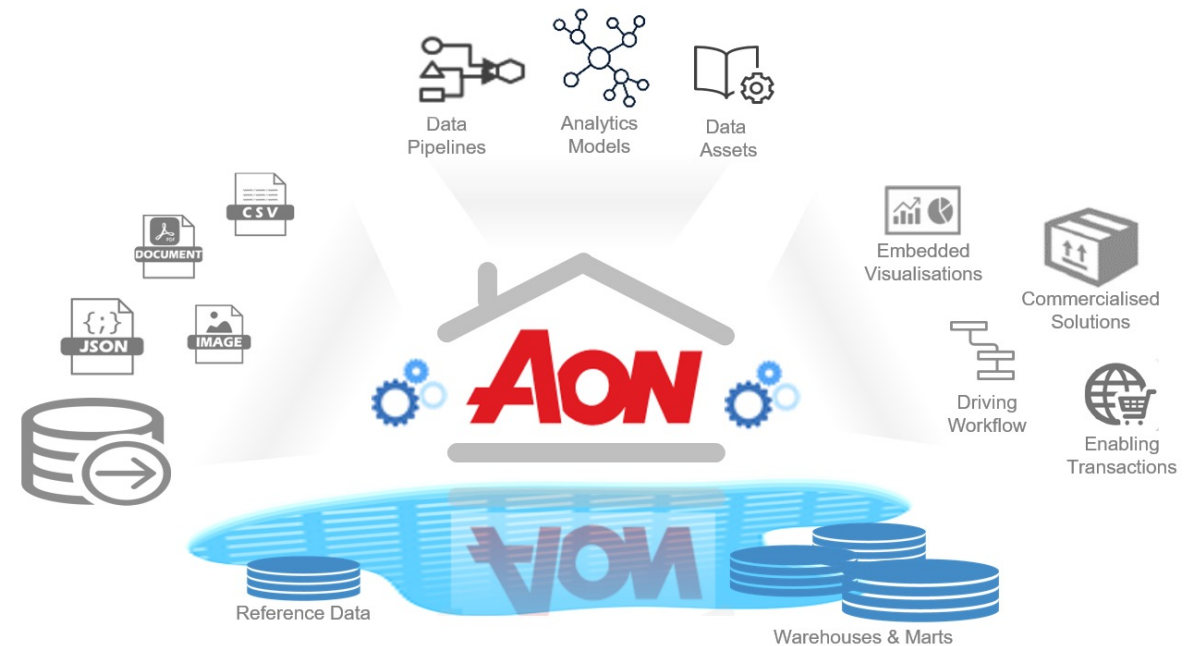
## The Opportunity

- Enable our data professionals to do their best work – modern tooling, lower hurdle to access cloud, collaboration options
- Leverage best of cloud-native services (PaaS) and commercial software (IaaS/SaaS)
- Workbench for early data exploration – avoid big bets and new infra projects
- Simplify pathways to production for commercialising solutions

## Business Imperatives

- Security & Privacy by design and by default
- Raise the bar on Data Governance and Analytics Development LifeCycle (ADLC)
- Achieve economies of scale through standard technology and patterns
- Ensure sustainable operating model for data-driven solutions

## The value proposition for Aon data professionals...



# It started with Persona-Driven Design



## Data Engineer

*Build our data supply chain to ensure solutions stay fresh*



## Data Scientist

*Create points of differentiation through advanced analytical technique*



## Data Analyst

*Derive data points of interest and create visual insights that drive customer action.*



## Application Dev

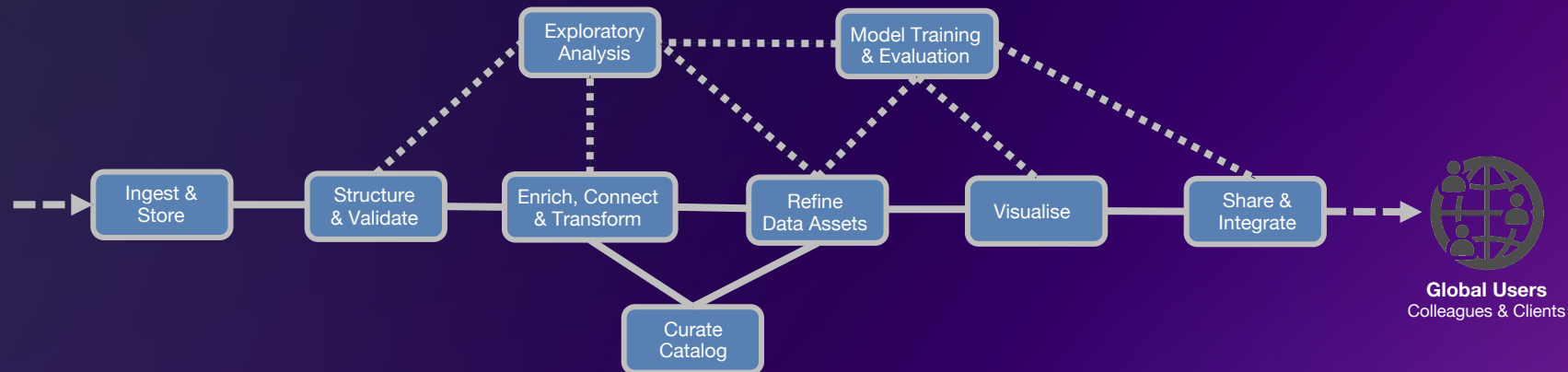
*Creates the user experience that assists clients in navigating data and taking action*



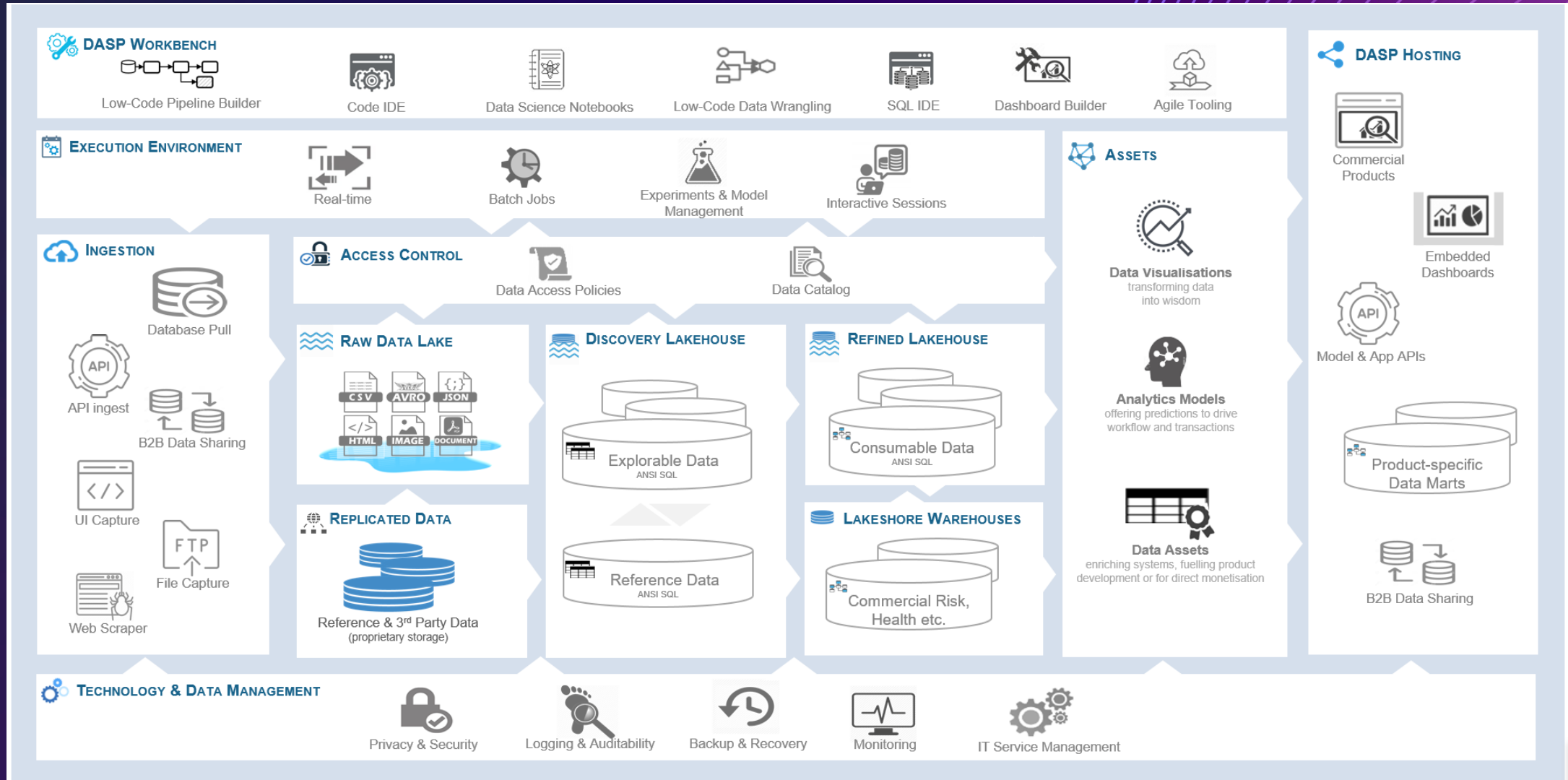
## Data Steward

*Oversee data assets for the firm, for understanding, governance and appropriate sharing*

## Generalised Analytics Development LifeCycle (ADLC)



# Aon's Global Data & Analytics Platform



Added Data Ingestion, Data Catalog & Hadoop Data Lake capabilities

Opportunity assessment process & prioritisation forums for tenant onboarding. CoE and CoI models mature

2018

Business case for seed funding, garner support from solution line CIOs. IT team from Aon Centre for Innovation & Analytics joins Global Aon Technology

Added website content management & dashboard embedding capabilities

Data Access Control tooling: Teams start sharing data, demonstrating value of joining the DASP network

- Continuous Onboarding
- How-To Guides
- Product Lifecycle Management Activities
- Standard Operating Procedures
- 'Public' Support Channel via MS Teams



Data Profiler enriches catalog with metrics on 100K+ data sets

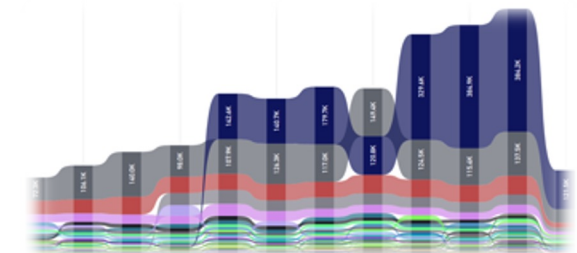
Common Aon Reference Data shared via platform with all teams

DASP Console MVP launch, helping teams manage their membership, data & costs

Added Document Analytics workbench for OCR & Entity Extraction of unstructured data (CoE + Self-Service delivery model)

Analytics Hosting Service now powers 50+ data-driven business applications (↑90% Web/API visits YoY)

- Continuous success stories "Powered by DASP"
- Webinars & Short-form Videos
- Tenant Healthchecks
- Promoting Data Reuse
- Embedding insights in global IT applications



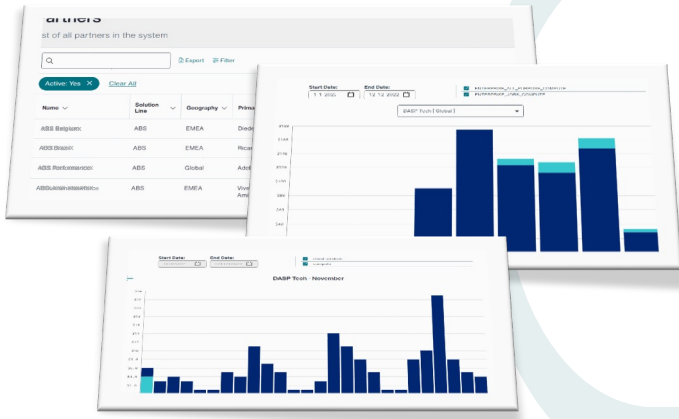
Aon Enterprise Data Model standardises our Data Topics for classification in catalog

First B2B Direct Data Sharing with insurance carriers + first 3<sup>rd</sup> party data consumed from marketplace

Modernised the Data Stack, migrating Hadoop to Lakehouse & ephemeral data processing capabilities

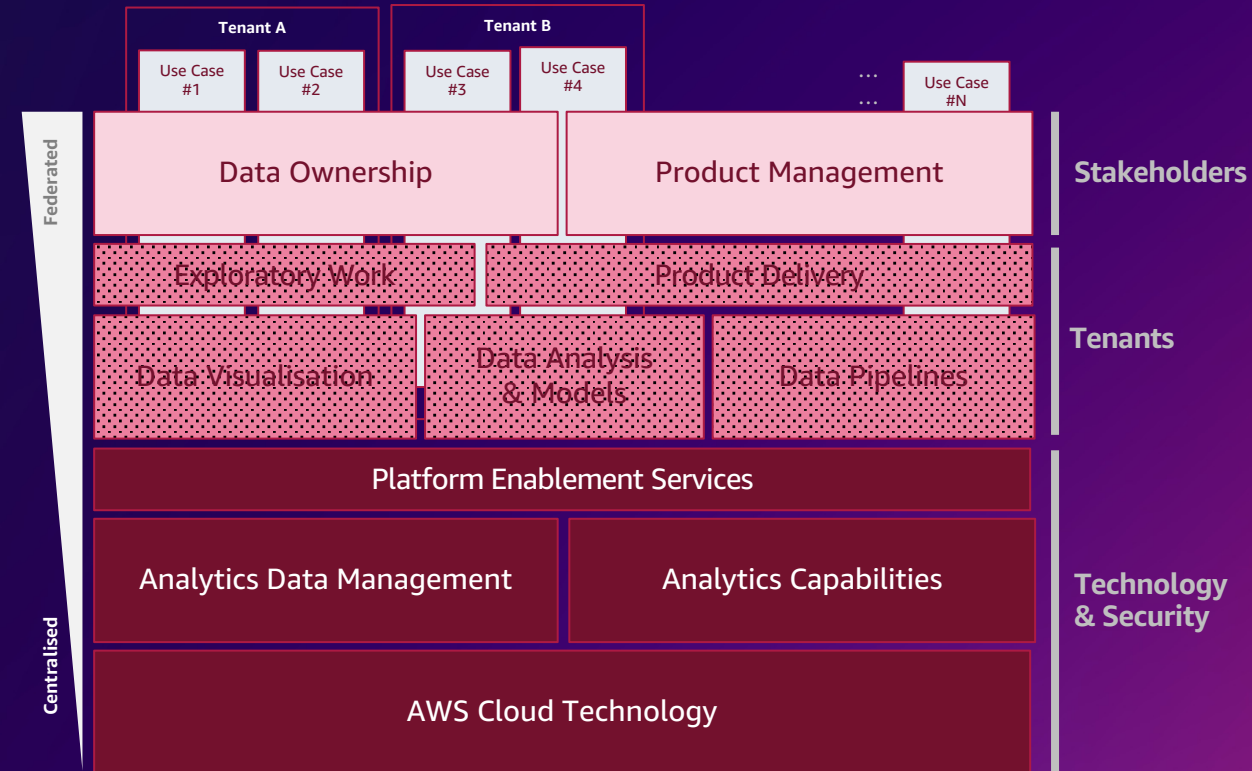
Defining and enabling Data Accessibility framework, Data Quality and DCAM standards generally with Chief Data Office

2023...



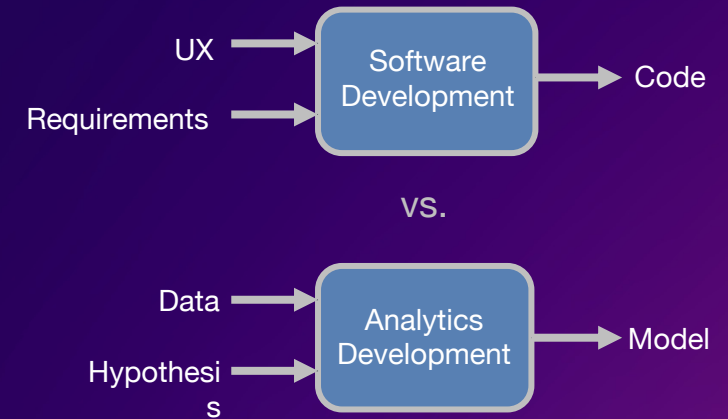
# Learning #1: define Responsibility Model for multi-tenancy early

- Commercial software needed to support Enterprise IT overseeing multiple isolated tenants
- Role-Based Access Control (RBAC): find the governance sweet-spot of controls without sacrificing developer autonomy
- Evaluated software against our target controls, understanding where processes cross swimlanes
- Isolation as the default, but achieving network effects required 'easy button' for governed data/code sharing



# Learning #2: secure analytics development on a production workbench

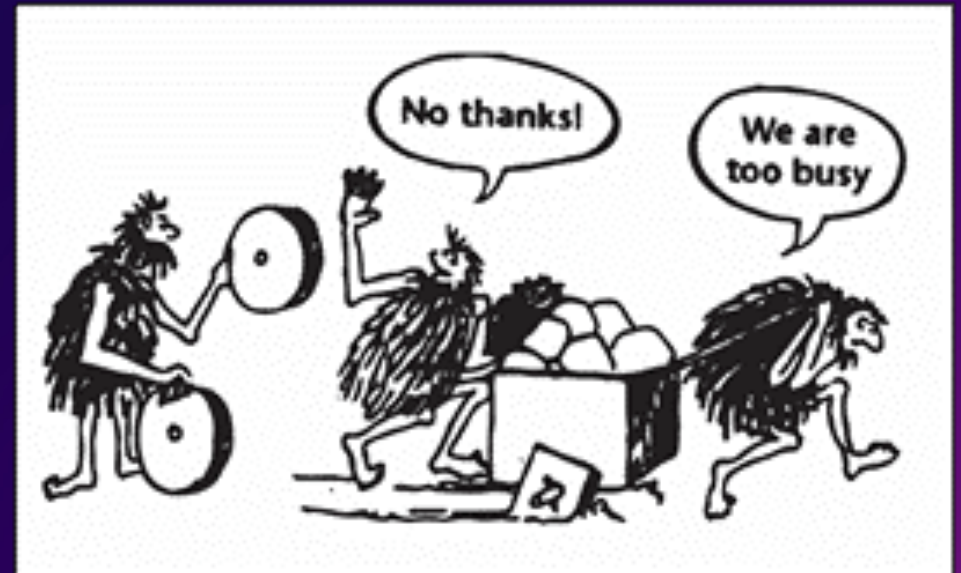
- Analytics solutions are a function of the data they process, not like most traditional software development.
- Mock data and data obfuscation worked, to a point. Ultimately model testing & refinement requires real data.
- Lower lifecycle IT environments (DEV, TEST etc.) may have different controls not appropriate for real business data.
- We concluded analytics should be developed under protection of production controls to ensure data security.
- Our workbench provides a controlled environment for data discovery and model development; new software build/assessment goes through standard lifecycles first.



# Learning #3: the tenant experience requires ongoing investment

- A positive onboarding experience was essential to perception of value. Key measure is 'Idea -to- Launch' time.
- Tradeoff choosing best-of-breed tools is heavy investment in integration. Hard to quantify and sometimes achieve.
- Enterprise standards in identity and access management, secrets management, monitoring etc. adds dependencies.
- Focused on the community enablement through patterns and guides to strengthen our internal brand.
- At some point building a 'single landing page' for tenants was justified, but a 'single pane of glass' was not.

Shouldn't we integrate that?



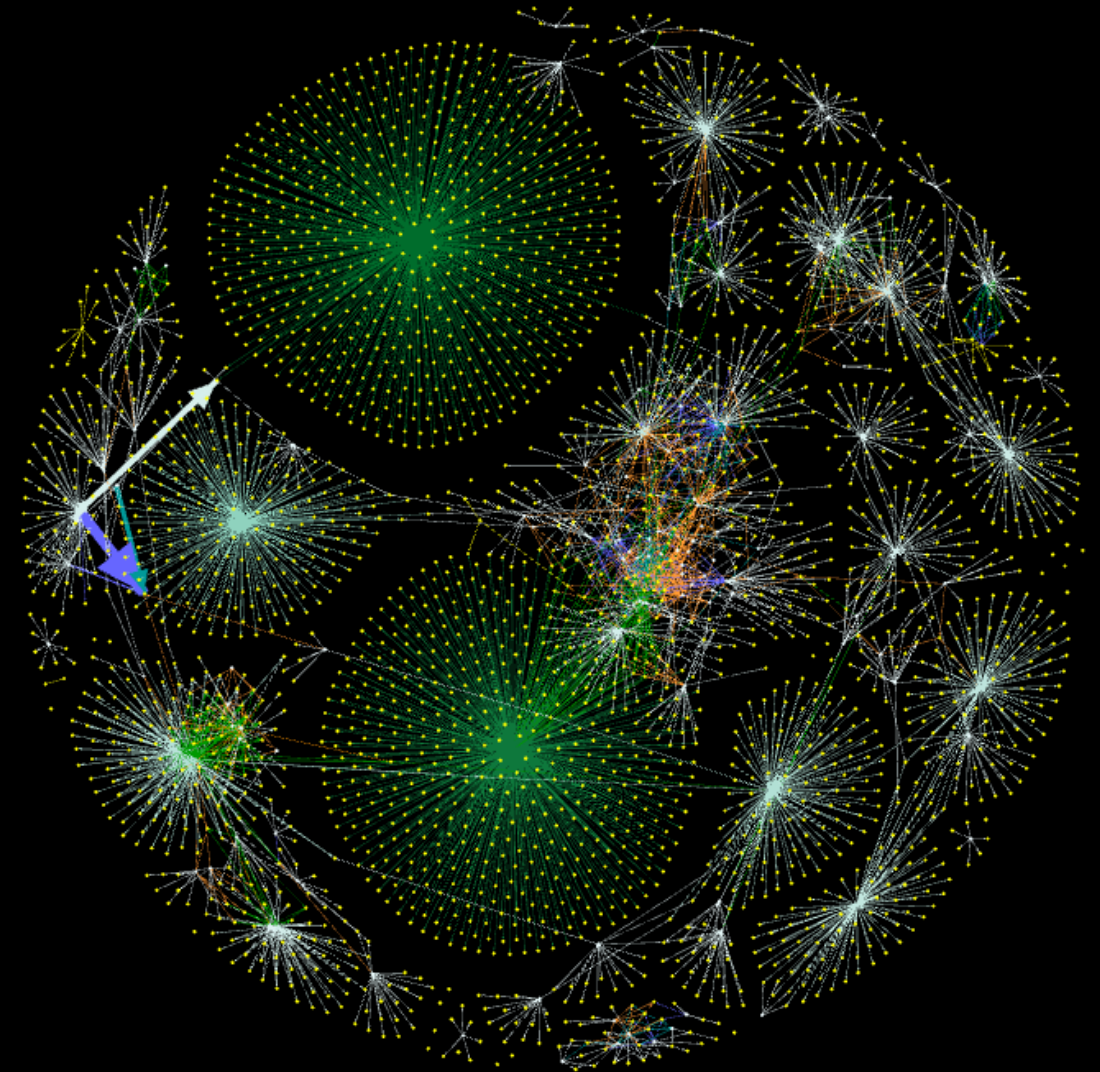
# Driving value for clients

- Aon Human Capital Solutions delivers **AI-driven insights on technology talent globally**, including geography-based pay differentials which is "essential for finding the best technology talent and optimizing within the client's existing workforce"
- AWS cloud-native **Document Analytics workbench** and COE team processing ~4K documents per day, delivering >\$2M of efficiencies, and avoiding \$1M+ external software spend.
- Our Health Actuarial and Analytics teams ingest employee health information, insurance and claims, workplace safety, absence and engagement data, and external data on health trends to help a manufacturing client meaningful improvement in selected health metrics at 24% lower cost per person.
- Our latest Weather, Climate, and Catastrophe Insight report cites global economic losses from natural catastrophes at 313 billion, 4% over the 21st-century average; and with only 42% covered by insurance, \$190Bn protection gap.
- Aon Innovation Olympics 2022: >25% of initiatives were built on our Aon's Data & Analytics Platform.

100+  
teams representing  
1000+ Aon practitioners

120K+  
data assets in  
Aon Data Catalog

90%+  
Increase in web/API hits  
on analytics YoY



*Green = system-to-system interaction*  
*Yellow = databases held in platform*  
*Other = colleagues running interactive analytics*



# Thank you!

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