Trusted Data Through Security by Design

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Today, safely storing data alone does not provide the value-add clients need in order to differentiate and compete.

The real value lies in being able extract meaningful insight to make more informed decisions and ultimately, provide predictive models for business’ success.

Regardless of where the data lives, extracting meaningful insight from data has never been more important.
Unified Governance to Improve Information Economics
Cost, Risk and Value Alignment

Find and understand your structured and unstructured data wherever it resides, manage, archive and dispose of it safely and effectively.

Simultaneously lower costs, mitigate risks and support compliance.

Maximize data value and drive better business outcomes.
Use Cases Driving a Unified Governance Strategy

<table>
<thead>
<tr>
<th>GOVERNANCE FOR COMPLIANCE</th>
<th>GOVERNANCE FOR INSIGHTS</th>
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<tbody>
<tr>
<td>Discover, classify and manage information in ways that meet the obligations enforced by both regulatory and corporate mandates</td>
<td>Provide safe access to trusted, high quality, fit-for-purpose data while facilitating effective collaboration among team members</td>
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<tr>
<td>Regulations (e.g. GDPR)</td>
<td>Self-Service Access to Data &amp; Analytics</td>
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<td>Privacy &amp; Protection</td>
<td>Governed Enterprise Information Repositories (such as Data Lakes)</td>
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<td>eDiscovery</td>
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<td>Records &amp; Retention</td>
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<td>Archiving</td>
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<td>Audit Readiness</td>
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Our Portfolio: Power Behind and Across Your Firewall

Data Science & Machine Learning
Embrace new ways to develop insights and streamline operations

Unified Governance
Enable better insight and compliance across all data

Hybrid Data Management
Unify the approach to data and content on the path to cloud

Data Analytics & Visualization
Empower all to make data-driven decisions quickly and easily

Open Source: Hadoop, Spark & more
Commit to openness—for speed and innovation
In the past, the way we went about helping users was to custom-build, on demand.
This was the result.
Make Data Make Sense

- Find and discover all of your data – unstructured and structured.
- Match and transform data from any source thereby freeing you up for more strategic efforts.
- Form a single version of truth, a 360 view of trusted data to break down data silos, allowing information stakeholders with insight and action.
Make Data Make Money

- Leverage the value of your data unlocking insight driving competitive advantage every single time you access data.
- Capitalize on the data and derive revenue based on solid information governance foundation making data simplified and actionable.

High Quality, Timely Information for All

- Empowered Data Scientists
  Uncovering Unique Insights

- Empowered Organization

- Better Business Outcomes
What is Hybrid Data Management?

- Global data will reach 40 zettabytes by 2020
- Structured data is growing at the rate of 40% every year
- Content is growing at a rate of about 80% annually
- Data generated from machines will increase by 15 times by 2020
Example: GDPR Policy Management

**Purpose**

- Model and store centrally all of the GDPR policies relating to the use of personal data, many of which relate to when/where data subject consent is required
  - *Other policies may be modelled and stored as well*
- Provides the logic for determining when/how personal data may be used, based on policies and consent

**Approach**

- Provides both graphical and programmable interfaces for defining policies, the purposes and the types of data associated with them
- Supports grouping and hierarchies of policies
- Includes a mechanism for indicating the priorities of the policies in relationship to each other
- Example GDPR policies are provided
- Data usage API enables one to determine whether specific data items belonging to a data subject may be used for a given purpose, based on the policies in the repository and the status of the data subject’s consent
  - Based on Data Subject Consent Management Service

**Outcome**

- Repository of GDPR policies relating to use of personal data
- API for determining when/how personal data may be used
We believe that security in the cloud should be built in, and not bolted-on...

**Default**
- Customer-transparent security strategy
- One compliance roadmap

**Measurable**
- Automated measurable security
- Centralized security operations and response
- Established security patterns, risk and governance

**Easy**
- Standardized security architecture and review
- Shared security services
Architectural consistency around security & compliance

Exit criteria for shipping a service
- Security Events – including security event logging (QRadar)
- BYOK – any data that is encrypted must support customer managed keys from Key Protect
- IAM – all identity and access management must leverage platform IAM capabilities
- Certificates – any use of certificates must be tied to upcoming Certificate Management service
- Secure Engineering – patching system/strategy will follow secure engineering and use Service Now
- Compliance – record keeping/change records (Service Now)
- Logging – platform log collection/retention
- Security Reviews – follow the internal architecture gates to demonstrate how security is not compromised

Metrics being tracked per service
1. Security Compliance (% compliance against target)
2. Service Contract Compliance (Yes/No)
3. Unit Cost of Delivery (actual/trend/goal)
4. End user global uptime (%)
5. End user performance (actual/target)
Security Team and Tribal Responsibilities (Security Guild)

**Security Team | Govern, Guide, Monitor, Report and Enforce**

- Set Security Strategy, Compliance Roadmap and Security Policy
- Provide Awareness, education and training
- Cloud-wide risk management
- Security automation and architecture
- Security monitoring, alerting and response
- Audit, assessment and vendor management
- Security testing and consultation
- Governance, quantifiable accountability and reporting

**Tribes | Rationalize, Implement, Deliver and Maintain**

- Ensure adherence to security standards, baselines and policy
- Adherence to Compliance Roadmap commitments
- Security Focal program participation
- Manage service security and compliance backlog
- Security defect and vulnerability remediation
- Deliver against operational security requirements (DDOS, WAF, etc)
The path to Cloud Native is through hybrid

Supports microservices for speed and cognitive applications

Cloud-enabled solutions

- Information
- Process
- Interaction
- Partners
- Applications
- Access

Cloud native solutions

- Composable environments to rapidly build and deploy new cloud-native and mobile solutions
- Flexibility to move apps to the cloud as-is or build cloud native solutions
- Leverage existing investments by connecting them to cloud services

Multi-speed IT

Digital ecosystem
CONVERSATION
COGNITIVE AND AI
DATA PLATFORM
CLOUD
PUBLIC
DEDICATED
LOCAL
ACCELERATED VALUE
SEAMLESS DELIVERY
OPEN CLOUD ARCHITECTURE
SERVICE MANAGEMENT
**Transformation** From a siloed, largely relational, technical and cultural environment to a cloud-based, cognitive environment, capable of deriving and acting rapidly on cognitive insights from massive structured and unstructured, internal and external data.

## Outcomes:
- Elimination of siloed data – view of data across the enterprise
- Reduced support costs and improved consistency and quality of data, access control and ability to monitor/report usage
- Faster access times
- Standardized KPIs
- Improved service levels and uptime for business systems
- Increased adoption of cognitive methods
- Reduce set up time and cost of cognitive projects

## CDO Cognitive Journey Map

### Technology Development
- **Data-as-a-Service**
  - Cognition-based Q&A, enable business users
- **Trust-as-a-Service**
  - Privacy by design, in addition to enabling regulatory compliance
- **Cognition-as-a-Service**
  - Watson Services and APIs

### Information Governance
- **Data Acquisition: Content Buyer**
  - Cognitive content reviewer on overlap, scope, "best" provider(s)
- **Data Curation: Cognitive Metadata**
  - Cognitive data catalog management, automatic creation/ linkage of business to technical terms
- **Data Integration: Entity Recognition**
  - Single engine to assign common identifying code to entities.

### Master Data Processes
- **Client 360**
  - Increase seller productivity and increase revenue generation through Cognitive sales recommendation
- **Digital Business Insights**
  - Expert assistance with individual selection for marketing and sales
- **Proactive Client Management**
  - Early warning of delivery risk, and proactive opportunities for contract growth

### Cognitive Enterprise Processes
- **Automate Warehouse Migration**
  - Automatic learning and generation of ingestion and integration rules
- **Risk Insights**
  - Anticipate and act on supply chain risk, deliver risk mitigation insights
- **Cognitive Procurement**
  - Trusted buying advisor, deep supplier insight, dynamic pricing info

### Cognitive Enterprise Blueprint
- All components for a CDO to render their enterprise cognitive: Organizational considerations, technology, and business processes

### User experience journey
- Holistic view of customer, both internal and external
  - Self-service capabilities to inform and enable decision-makers
  - Directly usable by subject matter experts to derive insights
  - All enabled through cognitive interaction

### CDO experience journey
- Reduced time and effort
- Proactive monitoring and alerts
- Continuous learning from data and user feedback
- Build and improve repeatable/productized service offerings
- All enabled through cognitive interaction