IBM Global Chief Data Office *Cognitive Enterprise Blueprint*

Organizational Considerations

- Data strategy catalysts
- Transform and reinvest
- Recruit, retrain, and retain talent
- Business Unit leadership
- Engage top technical talent: Data Scientists, Data Engineers, Dev Ops, Deep Learning specialists
- Governance & monetization expertise
- Policy and risk
- Essential communities
- Addressing culture change

Technology

- Cognition / AI Services with ability to contextualize across all data
- Cloud services - open by design; GPUs, fast interconnect to accelerate AI training
- Hybrid integration and deployment choice
- Enterprise cloud container support
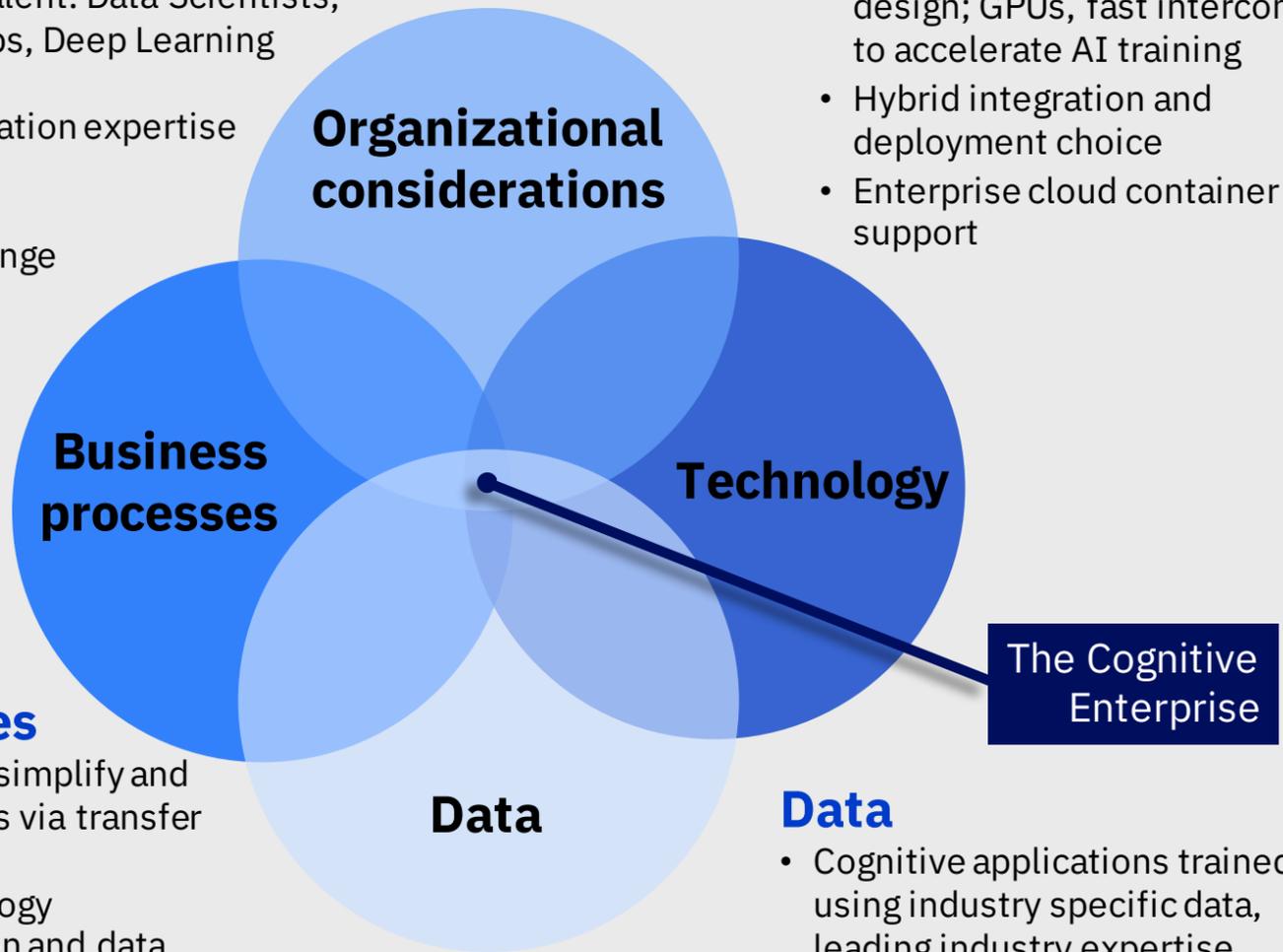
Organizational considerations

Business processes

Technology

Data

The Cognitive Enterprise

Business Processes

- Use previous insights to simplify and accelerate new use cases via transfer learning
- CDO Processes: Technology development, information and data governance, client and product master data processes, and business integration
- Cognitive Enterprise: Supply Chain, Procurement, Finance, Real Estate and Site Operations, Marketing and Communications, and more

Data

- Cognitive applications trained using industry specific data, leading industry expertise
- Data-as-a-service, high scale ingestion, accessing data for analysis and manipulation
- Data Responsibility: your data, your insights
- Self-service & out of the box tools

Five foundational use cases

1. Data Responsibility

IBM's 5 principles of Data Responsibility

DATA OWNERSHIP AND PRIVACY
A world being reshaped by the phenomenon of data requires clarity around the rules of the road to ensure that their rights are protected.

DATA FLOWS AND ACCESS
IBM is fully committed to protecting the privacy of data, which is fundamental in a data-driven society.

DATA SECURITY AND TRUST
Drawing on our global array of relationships to convene business, government, academia and all of civil society to address our collective need, while striving to strike the crucial balance among security, privacy and freedom.

DATA AND ARTIFICIAL INTELLIGENCE
AI capabilities – which are better understood as "augmentation" than "artificial" – represent a positive and transformative force for businesses, institutions, governments and individuals.
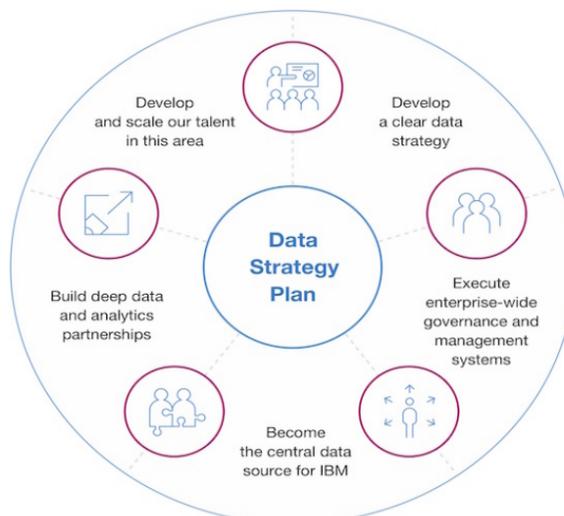
DATA SKILLS AND NEW COLLAR JOBS
Leading efforts to ensure workers worldwide are prepared for technological and business shifts that are changing the way work gets done, and that are driving productivity, economic growth and job creation.

2. Data Strategy

Develop a clear data strategy
Hire a Chief Data Officer; secure approval and buy-in from senior leadership internally. Execute strategy into action.

Data Strategy Plan

Develop and scale our talent in this area

Develop a clear data strategy

Build deep data and analytics partnerships

Execute enterprise-wide governance and management systems

Become the central data source for IBM

Become the company's central source of trusted information
Consolidate enterprise critical data and make it available as a service. Right now, data is scattered across business units, siloed. One data source provides consistency and data accessibility across the business.

Execute enterprise-wide governance and management systems
Establish Chief Data Officer as a trusted steward of data who enforces consistent monetization efforts. Internally that means cost reduction, streamline processes, reduce and shift costs, increase sales and revenues.

Build deep data and analytics partnerships
Special teams focused on rapid integration of critical data, including data from third-party acquisitions, into the consolidated data platform. Help enable yourself to become a competitive differentiator.

Develop and scale talent in this area
Hire and retain talent in key areas: data engineering, data science, and deep learning for engineering and devops teams. Create a true agile environment where several Build-Operate-Service teams working autonomously and fluidly off the same cognitive data platform.

3. Cognitive Enterprise Data Architecture

A **world-class enterprise data infrastructure** that integrates strategic cognitive IBM offerings on a **cloud platform** with our enterprise data in fundamentally new ways.

- **Cognitive Enterprise Data Lake** (CoEDL) on flash storage
- **Hybrid Cloud** Infrastructure
- **GPU, fast interconnect, accelerators** to address AI workloads

Accelerate cognitive architecture with:
- Customer focus on data consumers
- Machine Learning with a "human-in-the-loop"
- Software automation of roles, policies and consent

Comprehensive

Connected | Automated

Timely | Real Time

Standardized | Dynamic

4. GDPR   *Use cognitive capabilities to accelerate your GDPR preparation.*

Security
Protection of the fundamental privacy rights (e.g. protecting the security and confidentiality of Personal Data, but also providing proper use, notice, consent, choice, access, rectification and erasure, just to name a few.

Governance
Determine how you can translate GDPR into actions, norms and values. Consider what measures need to be taken, are they effective and how can you improve them.

Cloud
IBM Cloud is agile and scalable with built-in data security that can be consumed on premises or as SaaS offerings. Our comprehensive data security platform is designed to helps safeguard sensitive data wherever it resides.

People, Processes and Communications
Support your employees as they train on GDPR requirements. They need to understand the risks and impact of improper data use, how GDPR will influence them, what's the impact and how you can manage the required changes.

Data
Govern the quality of your data, assess what data you have, what you're using it for and consider how you can interact with individual customers, clients, or third parties.

Cognitive insights
IBM Regulatory Compliance Analytics with IBM Watson utilized to digest and identify controls and obligations.

Compare
Insight with the ability to load contracts for Watson to analyze and consider the key language, clauses or paragraphs driving the need for further analysis or change.

GDPR cartridges
Plug-in extensive unstructured personal data discovery rules using both Regular Expression and machine learning.

Data protection
Structured personal data discovery and classification, personal data access and data subject rights audit trails, and reports associated with your GDPR responsibilities and data risk dashboards.

5. Automated Metadata Generation

How can we leverage cognitive capabilities to automate metadata generation?

IBM's Cognitive Approach

Today's Standard Approach

Traditional ML Approach

Watson Knowledge Studio

Watson Developer Cloud API's

IBM Cloud

Watson Explorer

Watson Discovery Service

Deep Learned Approach

IBM GCDO Deep Learning:
Uses available data in the Cognitive Enterprise Data Platform to naturally learn the business level meta-relationships while using existing metadata.