CS 4440 - Kexin Rong Georgia Institute of Technology

Information Management: "Managing Data Across a Global Enterprise".

April 2nd 2025

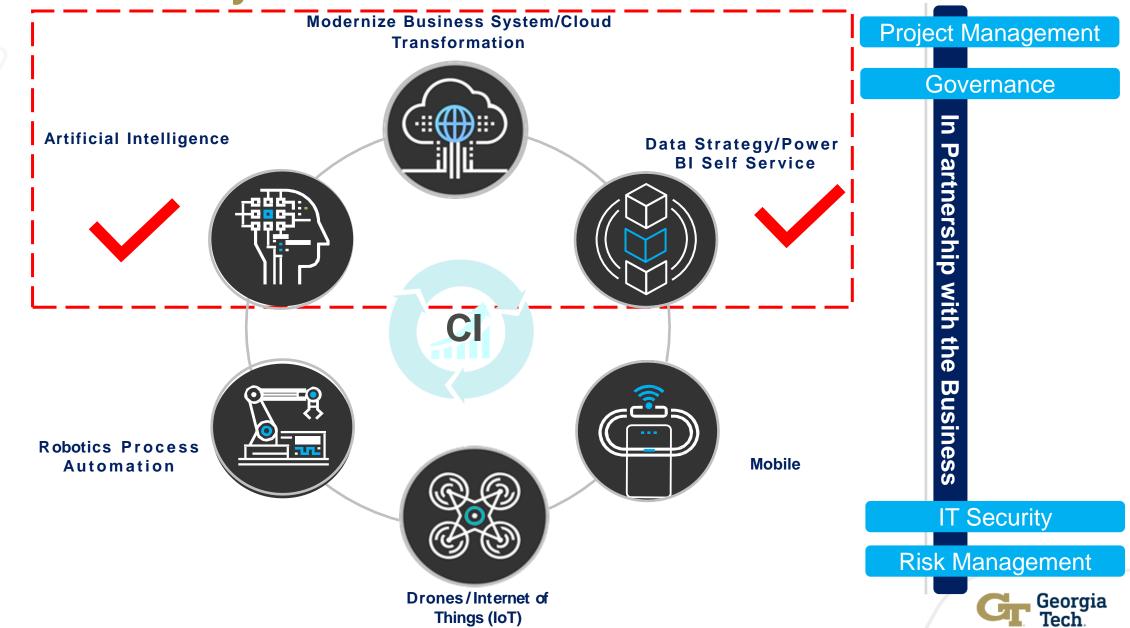


Agenda

- Innovation Cycle
- Digital Transformation- Overview
- Roles
- Implementation Approach
- Case Studies



Innovation Ecosystem- Focal Points



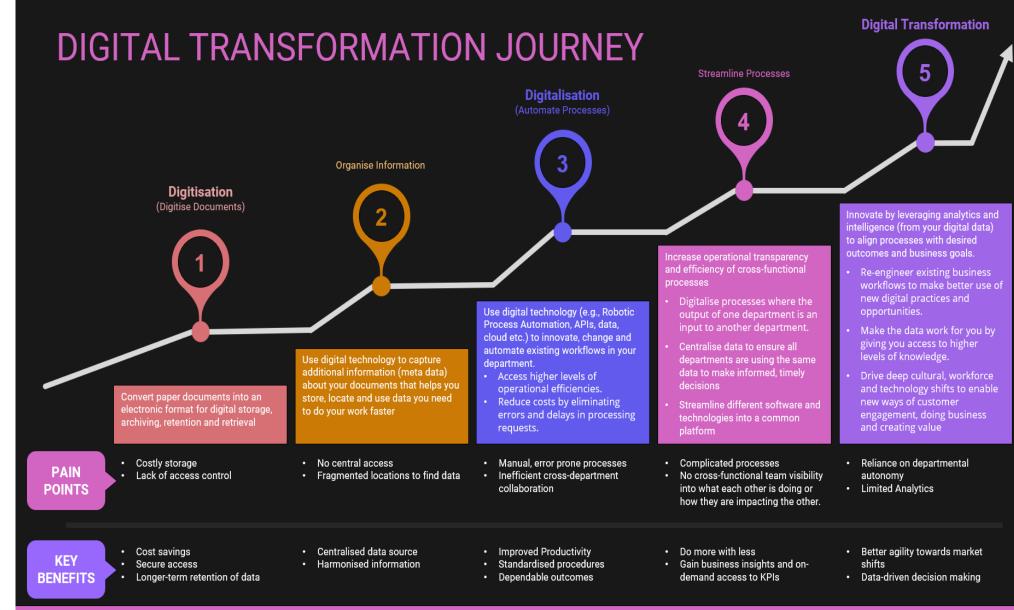
DIGITAL TRANSFORMATION



Digital Transformation Journey

Benefits

- StrategicAlignment
- RiskManagement
- Enhanced Customer
 Experience
- Operational Efficiency
- Innovation and Agility
- Measurable
 Success



Artificial intelligence is a machine's ability to perform some cognitive functions we usually associate with human minds.

The evolution of artificial intelligence

Artificial intelligence

The science and engineering of making intelligent machines

Al is the broad field of developing machines that can replicate human behavior, including tasks related to perceiving, reasoning, learning, and problem-solving.

Machine learning

A major breakthrough in achieving Al

Machine learning algorithms detect patterns in large data sets and learn to make predictions by processing data, rather than by receiving explicit programming instructions.

Deep learning

An advanced branch of machine learning

Deep learning uses neural networks, inspired by the ways neurons interact in the human brain, to ingest data and process it through multiple iterations that learn increasingly complex features of the data and make increasingly sophisticated predictions.

Generative AI

An advanced branch of deep learning

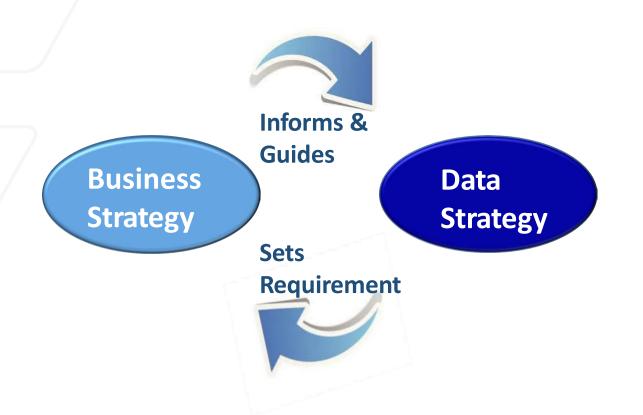
Generative AI is a branch of deep learning that uses exceptionally large neural networks called large language models (with hundreds of billions of neurons) that can learn especially abstract patterns. Language models applied to interpret and create text, video, images, and data are known as generative AI.

McKinsey & Company



Getting it Right

The Key Features of an Effective Data/Digital Transformation Strategy





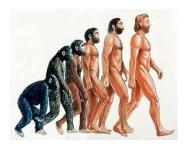
ALIGNED Directly
Connected to
Business Drivers.



UNIQUE to the specific organization



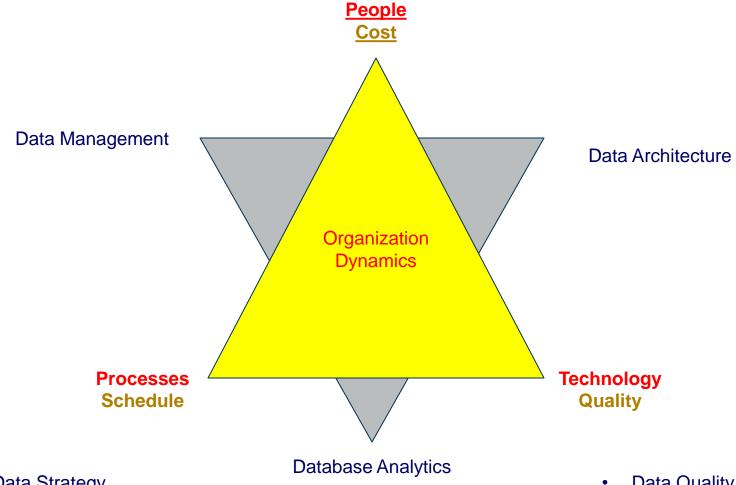
ACTIONABLE with clear activities & milestones



evolutionary to meet changing business needs & new technology



Approach



- **Data Strategy**
- **Data Analytics**
- Data Insights
- **Data Architecture**
 - **Data Governance**

- **Data Quality**
- **Data Acquisitions**
- **Data Operations**
- **Data Policies**
- Data Security/Protection



Roles

Data Scientist

Data Architect

Chief Data Officer / Chief Analytics Officer



Data Quality

Data Operations

Data Governance

- Data Strategy
- Data Analytics
- Data Insights
- Data Architecture
- Data Governance

- Data Quality
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Transformation Framework

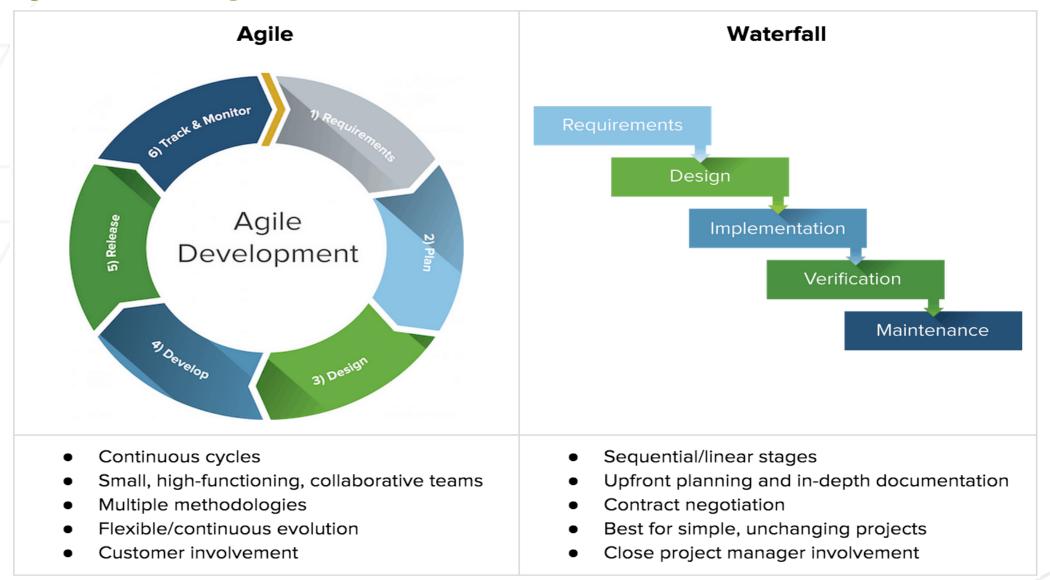
Data and Analytics Technology Application and Infrastructure **Data Strategy Data Analytics Modernization Data Insights** Security **Data Architecture** Innovation **Project Data Governance** Management Agile/Waterfall **Customer Engagement Operations** Scrum **Customer Segmentation** IT Ops **Business Ops** UI/UX Risk Management/Regulations Marketing/Sales **Product Management**

To scale up AI, organizations can make <u>three major</u> shifts:

- 1.Move from siloed work to interdisciplinary collaboration.
- 2.Empower frontline databased <u>decision</u> <u>making</u>.
- 3.Adopt and bolster an <u>aqile</u> mindset.

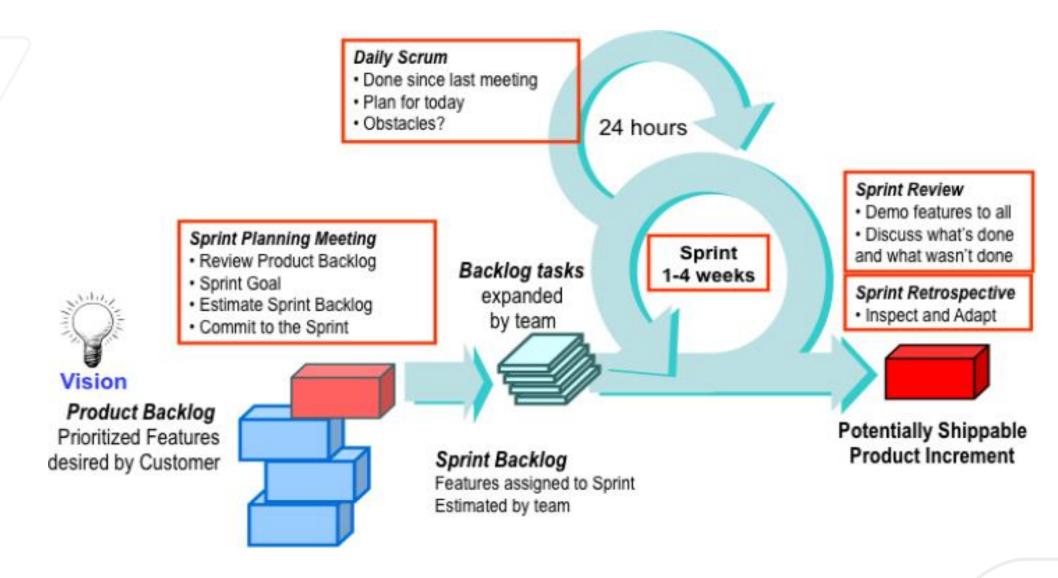


Project Management





Agile Project Management with Scrum





Data Analytics Roadmap IT Partnering with Business to align data to support business objectives, decision-making, and operational

efficiencies **Build AI/ML Models for Predictive Analytics Enrich DW with Unstructured & External** Segmentation, Severity Escalation, data: Pictures, Text, Social Media, Customer UX/Marketing, Design & Build Data Foundations: Models, DW Weather **Litigation/Risk Detection** Platforms, Business Glossary (Iterative Process) Identify Actionable Insights - Fraud **Enables Single Source of Truth,** Detection, Customer Insights, Smarter When it will Happen? Self-Service Analysis w/PowerBI Labor/Finance allocation Why did it Happen? **Data Strategy Prep Current State Assessment:** Data, Processes, Platforms, People **Understand /Fill Gaps Identify Business Use Cases -** Convert Manual Data Collection/Excels into Standard PowerBI Develop new dashboards/reports (Iterative Process) Leverage data for Operational Efficiencies; **Actionable Insights** What Happened?

Data Management, Governance & Quality - Assess data quality of critical data, establish data management and governance policies and processes for standard definitions, track quality measures (correctness, completeness, timeliness), to improve data quality (Iterative Process)

Collaborate with Continuous Improvement and Security Initiatives related to Data (Iterative Process)

Al Regulations and Governance

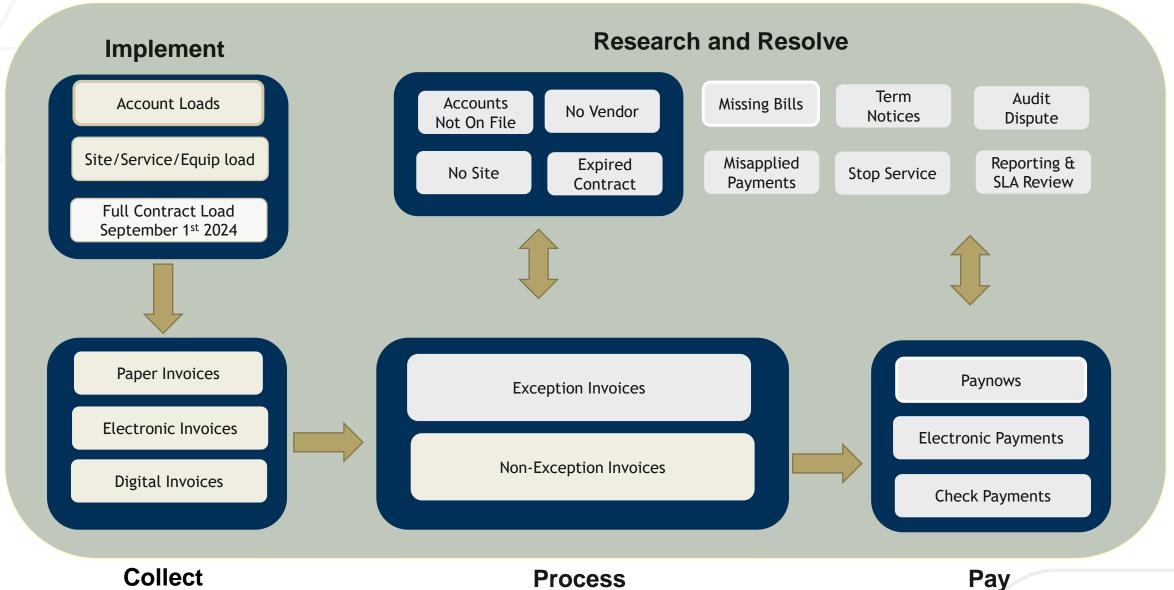
- Transparency. Create an inventory of models, classifying them in accordance with regulation, and record all usage across the organization that is clear to those inside and outside the organization.
- Governance. Implement a governance structure for AI and gen AI that ensures sufficient oversight, authority, and accountability both within the organization and with third parties and regulators.
- Data, model, and technology management.
 - Data management. Proper data management encompasses awareness of data sources, data classification, data quality and lineage, intellectual property considerations, and privacy management.
 - Model management. Organizations should establish principles and guardrails for AI development and use them to ensure that all AI models adhere to fairness and bias controls.
 - Cybersecurity and technology management. Establish strong cybersecurity and technology to ensure a secure environment where unauthorized access or misuse is prevented.
- *Individual rights.* Inform users when they are interacting with an AI system and provide clear instructions for its use.

CASE STUDY

Data Management- How is Data Management used within an organization



Invoice Processing



Interact (Client or Vendor Interaction)

Cloud Based, Utility Invoice Management Solution

Best in Class 6-Step Process



Vendor Sends
Documents to Cass

- EDI
- File Transfer
- EMAIL w/PDF
- Web Retrieval (RPA)
- Paper

Documents
Collected & Ingested

- Invoices
- Statements
- Weight Slips
- Manifests
- Other

Data
Captured & Extracted

3

- ML/Al Technology
- 40+ Fields
- Normalized
- Mix-in Data
- Split & Classify

Bill Payment

- Accurate
- On time
- Software Integration

Invoices Audited

- Match invoice to Contract
- Match invoice to Purchase Order
- Dispute
 Management

Reporting & Analytics

- Spend Management
- Audit Management
- Contract Management
- Diversion/ESG

Document Types

- Structured
- Unstructured
- Semi-structured

Waste Streams

- Non-hazardous
- Hazardous

Market Types

- Open
- Franchised
- City of (Q4)





EQUIFAX

A Global Data, Analytics and Technology Leader

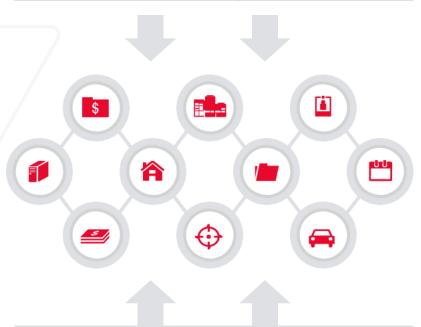
Cloud and Digital Journey



Real Time Integration of Data from Multiple Sources and State-of-the-Art Analytics Drives Unique Insights

Big Data

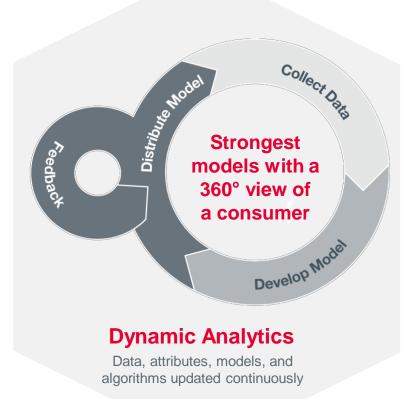
Varied new data constantly gathered from diverse sources and at large volumes



Customer/Consumer Data

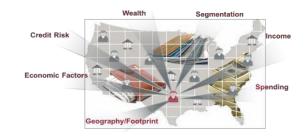
Unique customer data integrated into models

Population-based Analysis



Wide Range of Data, Analytics and Insights

VARIABLES & METHODS



ANALYTIC DIMENSIONS

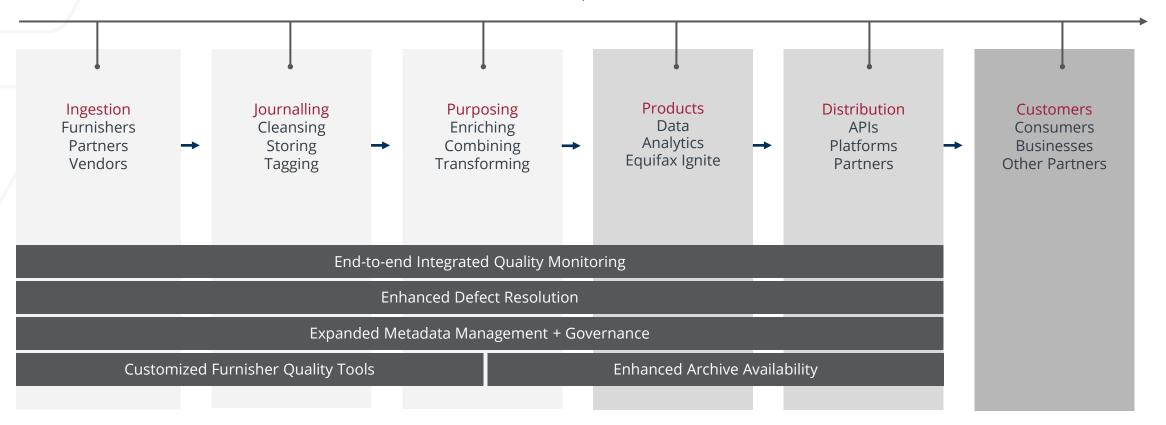






D&A is Establishing Trusted Data Pipelines through End-to-End Data Governance and Quality Integration Leveraging Data Fabric

To be considered the source of data and product truth from 100% of our clients





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THANK YOU!

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