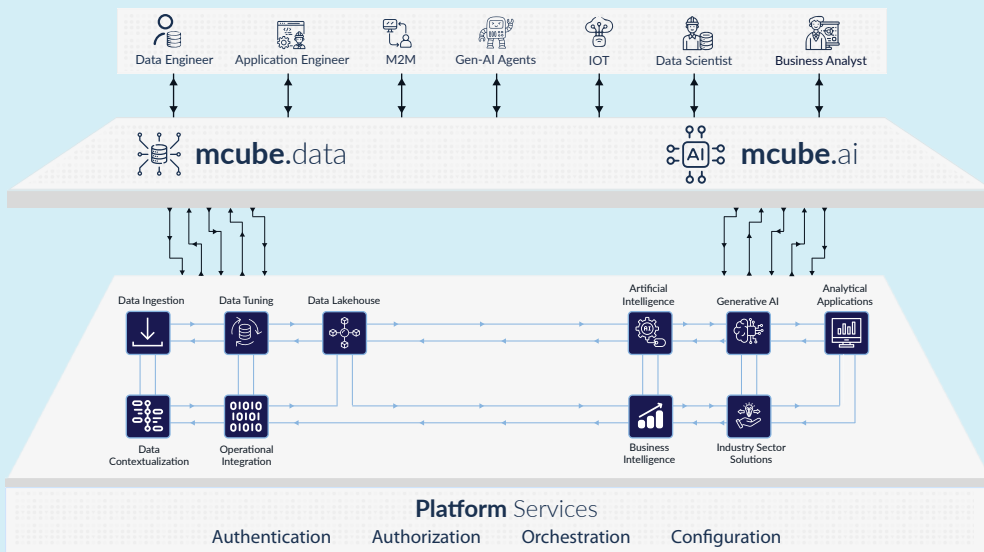# ::::: tcgmcube™

in a
Nutshell

tcgmcube™, TCG Digital's flagship Data, AI and Analytics platform, delivers what enterprises truly need – a governed, scalable, and simplified approach to managing data and enterprise AI applications. Built with a domain-driven design at the intersection of industry expertise and digital innovation, the platform is designed to handle the most diverse and disparate data landscapes. It integrates **mcube.data** and **mcube.ai**, offering advanced multi-modal AI capabilities; and robust data ops and management through a unified platform.

Data Engineer | Application Engineer | M2M | Gen-AI Agents | IOT | Data Scientist | Business Analyst

mcube.data | **mcube**.ai

Data Ingestion | Data Tuning | Data Lakehouse | Artificial Intelligence | Generative AI | Analytical Applications

Data Contextualization | Operational Integration | Business Intelligence | Industry Sector Solutions

Platform Services

Authentication | Authorization | Orchestration | Configuration

tcgmcube™ Core Components Driving Enterprise Data & AI Excellence

mcube.ai

The AI powerhouse of tcgmcube, combining an intuitive AI workbench, hybrid Gen-AI models, low-code capabilities with ezeXtend, and a BI engine to empower data scientists and citizen users to seamlessly build, deploy, and visualize impactful AI-driven solutions.

AI 2.0 Workbench

Extended Auto EDA
with customization capabilities
Auto-ML
for accelerating AI workflows
Robust MLOps
to move AI models from PoC to large-scale production
Multi-modal AI workflows
Classical ML, Deep Learning, Computer Vision, Gen-AI, all accessible from a low-code front-end

ezeXtend: Low-Code Configuration

Low-Code Configuration
of web interface screens for data capture / write-back / bespoke presentation / interaction with AI process flows
Drag-drop & Graphical Widgets
in constructing new web screens
Seamless Interaction
with our micro-services framework

Augmented Generative-AI

Knowledge Graphs with Semantic Layer
for thorough, domain-specific meaning
HybridRAG
combining VectorRAG & Knowledge Graph-based RAG for complex, data-rich environments and the basis of Agentic Architecture

Genie: The Microservices Framework

Reuse of complex processes/functions

Supports license-based access/authentication

On-demand, scalable orchestration and execution of services

Integration with any RESTful services accessible by tcgmcube

BI for Intuitive Insights

Data visualization with extensive library of charts/graphs

Self-service dashboards

Operational reporting for compliance

mcube.data

Designed to handle the complexity of today's data landscape covering structured, semi-structured, and unstructured data in real-time and batch environments.

Comprehensive Data Ops

Data Ingestion
Structured /Unstructured / Real-time/ Streaming data from Data Lakes / Warehouses / Data Lakehouse
Data Transformation
on-the-fly
Data Flow Automation

Semantic Layer

Knowledge Graph Inference
combined with Gen-AI to make complex information accessible
Ontology-Driven Discovery
for deeper data contextualization
Supports FAIR principles
for data management and data access
Local deployments with knowledge graph and LLMs in proprietary environments

Data Lakehouse

Combines scalability of data lakes with performance of data warehouses

Seamlessly integrates AI

Offers built-in semantic layers and metadata governance

Efficient data dissemination

User Stories:

Solving the most complex business problems

Scan to Download Case Study

Enabling Manufacturing Excellence for ADMA Biologics

ADMA Biologics deployed tcgmcube as its enterprise Data & AI platform to drive Manufacturing Excellence through a solution suite that included Batch Yield Prediction, Plasma Pool Optimization, KPI Outlier Detection, and more

Improving Plant Reliability with Remote Asset Monitoring at Haldia Petrochemicals

Haldia Petrochemicals improved plant reliability with a Remote Asset Monitoring solution built on tcgmcube that ensures safe, reliable operations through real-time tracking, utilizing geotags, NFC, etc.

Scan to watch Video

Scan to watch Demo

Transforming Life Sciences R&D with Gen-AI & Knowledge Graphs

Discover how tcgmcube redefines life sciences R&D by combining Gen-AI with Knowledge Graphs for context rich insights, expanded gene search results, and reduced hallucinations.

Expediting Drug Discovery with Bio-Assay Optimization for a Top Pharma

Know how tcgmcube is empowering a top pharma's bioassay processes with AI-driven precision, delivering optimized workflows with bi-directional integration with LIMS

Scan to watch Demo

tcgmcube for **Data Scientists**

Offers a comprehensive AI workbench, enabling seamless workflows from project creation to deployment and monitoring. With advanced data management, feature engineering, support for big data and real-time streaming, and an extensive library of AI, Gen-AI, and multi-modal methods, it delivers scalable, GPU-powered analytics processing engine for cutting-edge innovation.

tcgmcube for **Business Users**

Empowering business users with tailored low-code AI and analytics applications, enabling rapid time-to-value. Intuitive self-service visualization and robust dashboarding for seamless operational report creation and distribution.

tcgmcube for **IT Management**

tcgmcube supports IT management with its cloud-native architecture, offering seamless on-premise or cloud deployment. Users have innovations sandbox in the cloud for quick hypothesis validation. With write-back capability, real-time data processing, business process integration through SOA, and a centralized health monitoring of the system, tcgmcube ensures smooth, efficient operations.

tcgdigital

TCG Digital is the digital & AI arm of The Chatterjee Group (TCG), a multi-billion dollar conglomerate with a diverse portfolio in Pharmaceuticals, Biotech, Petrochemicals, and Real Estate across the US, EU, and South Asia. Our umbrella includes companies such as LabVantage, Lummus Technology, and TCG LifeSciences. At TCG Digital, we are driven by our mantra of delivering "Velocity to Value", helping enterprises transform faster and smarter. Our AI Analytics platform tcgmcube is at the heart of these transformations. We enable organizations unlock the full potential of their data, and by seamlessly integrating AI/ML capabilities into their business processes, we empower businesses to accelerate their digital transformation journey, enhancing agility and driving impactful results.

www.tcgdigital.com

tcgmcube™

tcgmcube is TCG Digital's flagship Data, AI and Analytics platform. Built with a domain driven design at the cross-roads of industry knowledge and digital prowess, our architecture is designed to handle the most disparate data landscapes with AI 2.0 being at the heart of it combining powerful and advanced models to solve the most complex business problems. The platform integrates mcube.ai and mcube.data, delivering AI capabilities and data management seamlessly through unified platform services.

www.tcgdigital.com/tcg-mcube