Impact of Global Capability Centers in the Food Industry

A Consolidated Analysis Across Packaged Foods, Beverages, Pet Foods & Distribution

Synthesized from multiple sources | February 2026

EXECUTIVE SUMMARY

Global Capability Centers (GCCs) have undergone a fundamental transformation across the food industry – evolving from transactional cost-arbitrage units into **strategic innovation and transformation engines**. This report synthesises findings from multiple independent research sources to present a consolidated analysis of how major players in packaged foods, beverages, pet foods, and food distribution are leveraging GCCs to drive competitive advantage.

Key findings from the research are as follows:

GCCs in the food sector have moved beyond back-office processing to **lead digital transformation, AI deployment, and supply chain orchestration.**

India is the **dominant GCC destination** for food companies, housing over **1,900 GCCs** with nearly **2 million professionals** as of 2026.

Leading companies including **Nestlé, PepsiCo, General Mills, AB InBev, Carlsberg, Mars, and Sysco** have established mature GCC operations delivering measurable financial and strategic value.

The pet food segment represents a **gap in public GCC disclosure**, though parent companies like Mars and Nestlé integrate pet nutrition into their broader GCC structures.

Financial Impact Highlights

20–40%

Cost Reduction

Reduction in transactional costs

5–10%

Working Capital

Working capital improvement

2–4%

Margin Uplift

Margin uplift from analytics

1. INTRODUCTION: THE GCC IMPERATIVE IN FOOD

The global food industry operates under persistent structural pressures: volatile commodity costs, complex multi-tier supply chains, thinning margins, ESG compliance mandates, SKU proliferation, and rapidly shifting consumer preferences. To meet these challenges at scale, leading multinational food corporations have established **Global Capability Centers** – wholly owned captive hubs that concentrate expertise in technology, analytics, finance, procurement, R&D, and supply chain management.

GCCs (also referred to as Global Business Services centres, Global In-house Centers, or Shared Services Centers) have followed a clear evolutionary arc:

Phase 1
Cost Optimisation
Finance, HR, procurement transaction processing

Phase 2
Process Excellence
ERP standardisation, shared analytics

Phase 3
Digital Enablement
Data science, automation, AI/ML deployment

Phase 4
Innovation & Strategy
R&D support, product analytics, sustainability modelling

Most leading food industry GCCs now operate at **Phase 3 or Phase 4 maturity.** The strategic rationale has shifted decisively: **talent access and capability building have overtaken cost savings** as the primary driver of GCC investment.

2. GEOGRAPHIC LANDSCAPE: WHERE GCCS ARE LOCATED

India has emerged as the dominant hub for food industry GCCs, driven by deep digital talent pools, English proficiency, cost competitiveness, and a mature GCC ecosystem. As of 2026, India houses over **1,900 GCCs** employing nearly **2 million professionals.**

Region	Key Countries	Value Proposition
South Asia	India (primary)	Analytics, IT, finance scale; 40–70% cost savings vs. Western operations
Eastern Europe	Poland, Hungary, Romania	EU proximity, multilingual support, European operations
Latin America	Mexico, Costa Rica	Nearshore to US; bilingual finance and operations
Southeast Asia	Philippines, Malaysia	Shared services, multilingual, F&A and marketing ops
East Asia	China (select)	Market-specific analytics for APAC operations

> Carlsberg's decision to establish its first-ever GCC in India in 2025 illustrates the country's sustained appeal. According to Esther Wu, Carlsberg's Group CIO, India **"stood out as a place where we can attract and retain talent,"** with the company reaching **250 staff within nine months** of conception using a Build-Operate-Transfer model with partner GSPANN.

3. SECTOR-BY-SECTOR ANALYSIS

Packaged food companies represent the most mature GCC segment in the food industry, with several organizations having operated capability centers for decades.

1

Nestlé operates GCCs across India (Gurugram, Chennai), the Philippines, Poland, and Mexico. Core capabilities include finance and accounting, procurement analytics, digital marketing analytics, supply chain planning, data science, and IT transformation. The organization uses its GCC network to standardize its global digital backbone, run end-to-end demand forecasting, and automate sustainability reporting. Nestlé also operates a dedicated Global IT Services Centre in Bengaluru supporting over 45 countries, and a Digital, Data, and Tech Hub established in Bangalore in 2022.

2

General Mills established its India Center (GIC) in Mumbai in 1996, making it one of the earliest food industry entrants into the GCC space. The center now employs approximately 2,000 people, with technology constituting the largest function at 850 employees. GIC operates on four technology pillars: Digital Core (SAP, Microsoft, ServiceNow, cloud infrastructure), Data and Analytics (AI/ML, automation), Enterprise Solutions (commercial technologies), and Compliance and Global Impact (cybersecurity, sustainability). The center is currently leading General Mills' global SAP S/4HANA implementation and has developed Mills Chat, a generative AI-powered internal knowledge platform.

3

Mondelez operates its India Technical Center in Thane – a $15 million facility dedicated to global chocolate and beverage innovation. The company also runs a Global Business Services unit in Mumbai with over 900 employees handling shared services. Mondelez uses India-based hubs to lead global digital marketing and consumer data analytics.

4

Kraft Heinz launched its first GCC in Ahmedabad, India, in 2023, focusing on global business services and operational excellence. The center planned to hire 1,800 professionals and earned Great Place to Work certification shortly after opening.

5

Kellogg's operates GCCs in Mexico, India, and Poland. Key functions include integrated business planning, finance transformation, commercial analytics, and master data management. The organization has used its GCC structure to standardize its ERP landscape and build analytics-driven category management capabilities.

Key GCC-Enabled Functions

01

Demand Forecasting & Revenue Growth Management

- Predictive analytics for SKU-level demand
- Trade promotion optimisation
- Pricing simulations

02

Supply Chain Optimisation

- Network planning models
- Inventory optimisation
- Digital twin modelling

03

Procurement & Commodity Risk Analytics

- Raw material price modelling
- Hedging strategy support

04

R&D Digitisation

- Ingredient modelling
- Product lifecycle management systems
- Nutritional compliance analytics

05

Marketing Analytics

- Consumer segmentation
- Campaign performance measurement
- E-commerce analytics

Strategic Outcomes

The concerted efforts of GCCs across these functions culminate in several significant strategic advantages for packaged food companies.

- Improved gross margins
- Reduced waste
- Improved forecast accuracy
- Faster innovation cycles

3.2 BEVERAGES

Beverage companies have invested heavily in GCCs for digital transformation, analytics, and complex multi-country supply chain management.

1

PepsiCo operates one of the most advanced Global Business Services (GBS) models in the food and beverage industry, with centers in Hyderabad (India), Poland, Mexico, and Egypt. Capabilities include revenue management analytics, AI-driven demand forecasting, supply chain control towers, marketing data analytics, and enterprise automation (RPA and AI). The Hyderabad GBS was significantly expanded in 2023. PepsiCo's GCC manages complex supply chain forecasting across over 200 countries and participates in a Chairman's Annual Innovation Challenge recognizing ideas from the center's talent.

2

Coca-Cola operates Atlanta-led centralized services complemented by strategic capability hubs in Latin America and Asia. Core focus areas include global finance operations, supply chain analytics, marketing transformation, and digital commerce enablement. The structure provides integrated visibility across the global bottler network and enhanced route-to-market analytics. Coca-Cola also operates a GCC in Gurugram with over 1,000 employees focused on retail, wholesale services, and technology solutions.

3

AB InBev's GCC in Bengaluru serves as a cornerstone for its global digital and data strategy. The center manages finance, analytics, supply chain, and automation for operations across multiple continents, integrating AI and data science to drive real-time operational efficiency.

4

Carlsberg launched its first-ever GCC in Gurugram in September 2025, with a supporting team in Hyderabad, reaching 250 staff within nine months via a Build-Operate-Transfer model with GSPANN. The center was designed from inception as an innovation hub rather than a cost center. Carlsberg has placed global leadership roles in India, including an AI Center of Excellence Lead with worldwide responsibility. The GCC supports IT services, infrastructure operations, and enterprise standardization across global markets.

5

HEINEKEN

Heineken announced the establishment of its APAC-focused GCC in Hyderabad in 2025, with a substantial investment and plans to hire up to 3,000 professionals. The center handles finance, HR, and IT for Heineken's international operations.GCC

GCC Focus Areas

01

Route-to-Market Optimisation

- Distributor analytics
- Route efficiency modelling
- Cold chain monitoring

02

Sales & Revenue Intelligence

- Outlet-level performance tracking
- Real-time sales dashboards
- Retail execution analytics

03

Digital Commerce Enablement

- Direct-to-consumer platforms
- B2B ordering systems

04

Manufacturing Digitisation

- Predictive maintenance
- IoT-based bottling line monitoring
- OEE (Overall Equipment Effectiveness) analytics

05

Sustainability & ESG Reporting

- Water usage analytics
- Carbon footprint modelling
- Packaging recyclability analysis

Strategic Outcomes

Higher distribution efficiency, improved asset utilization, stronger data-driven decision-making.

3.3 PET FOODS

Pet food is one of the fastest-growing segments within consumer packaged goods (CPG). While dedicated pet-food-specific GCCs are less commonly disclosed publicly, major parent companies integrate pet nutrition capabilities within their broader GCC structures.

1

MARS Petcare

Mars operates GCCs across India, Costa Rica, and Europe. Centralized capabilities include global procurement analytics, digital veterinary data systems, manufacturing excellence analytics, and sustainability reporting. Mars has established Hyderabad as a global hub for alternative protein R&D, with plans for significant manufacturing expansion in Telangana. The company is notable for combining food manufacturing analytics with pet healthcare analytics.

2

PURINA

Nestlé Purina operates within Nestlé's broader GCC structure but with dedicated focus areas including pet nutrition R&D data systems, ingredient traceability platforms, and veterinary consumer analytics.

3

Hill's | Blue Buffalo | Others

Broader pet food players including Hill's Pet Nutrition (Colgate-Palmolive) and Blue Buffalo (General Mills) benefit from GCC capabilities through their parent company structures, particularly in areas of DTC channel optimization, subscription churn prediction, personalized nutrition algorithms, and regulatory/quality compliance automation.

Research notes that the pet food segment represents a gap in publicly documented standalone GCC operations, potentially because diversified parent companies (Mars, Nestlé, General Mills) house pet food activities within broader food or consumer goods GCCs rather than creating pet- food-specific centers.

GCC Contributions to Pet Food Innovation

01

Consumer Data & Subscription Analytics

- Direct-to-Consumer (DTC) channel optimisation
- Subscription churn prediction modelling
- Personalised nutrition algorithm development

02

Veterinary & Health Data Platforms

- Health trend analytics across pet populations
- Breed-specific nutrition modelling and dietary recommendations

03

Regulatory & Quality Compliance

- Ingredient traceability systems
- Automated quality control and assurance processes

04

E-commerce & Omnichannel Analytics

- Marketplace optimisation strategies
- Digital marketing Return on Investment (ROI) analytics

Strategic Outcome:

Improved customer lifetime value, enhanced personalization, accelerated innovation in premium segments.

3.4 FOOD DISTRIBUTION & FOOD SERVICE

Food distribution companies face unique GCC challenges due to the B2B nature of their operations, complex logistics networks, and commodity trading functions.

1

Sysco

Sysco operates Sysco LABS in Sri Lanka (Colombo), which it describes as the "heartbeat" of its technology. Sysco LABS drives AI/ML-based merchandising, supply chain optimization, warehouse operations, and advanced e-commerce tools. The center has revolutionized product category optimization and supplier alignment. Other centralized capabilities include a logistics control tower, digital procurement, and enterprise IT.

2

US FOODS

US Foods has centered its GCC strategy on supply chain optimization, pricing analytics, finance automation, and procurement analytics. Strategic applications include route optimization, dynamic pricing systems, and demand forecasting for foodservice clients.

3

sodexo

Sodexo India presents a dual perspective: as a food distribution and services company, Sodexo is both establishing GCC capabilities and benefiting from the broader GCC ecosystem as a supplier. The company invested in major kitchen infrastructure in Hyderabad (opened 2023, handling 25,000 meals daily with plans to scale to 40,000) and Bengaluru to serve the growing corporate food market generated by the GCC boom. According to Sodexo India COO Rakesh Agarwal: "A lot of momentum in the GCCs...which means a lot of growth."

4

Cargill | BUNGE | ADM

Agri-food distribution and trading companies leverage GCCs for commodity trading analytics, price risk modeling, scenario simulation tools, blockchain-based traceability platforms, and trade compliance monitoring. These centers support farm-to-fork tracking and regulatory reporting across complex global commodity networks.

GCC-Driven Capabilities

01

Advanced Supply Chain Analytics

- Dynamic routing optimization
- Inventory balancing models
- Cold chain analytics

02

Commodity Trading Analytics

- Price risk modeling
- Scenario simulation tools

03

ERP & Financial Shared Services

- Global financial consolidation
- Trade reconciliation automation

04

Blockchain & Traceability Platforms

- Farm-to-fork tracking
- Regulatory reporting systems

05

Risk & Compliance Analytics

- Sanctions screening
- Trade compliance monitoring

Strategic Outcomes

Reduced logistics costs, enhanced traceability, better working capital management.

3.5 AGRIBUSINESS (SUPPORTING THE FOOD VALUE CHAIN)

1

YARA

Norwegian fertilizer company Yara operates GCC operations in India focused on transforming agriculture through digital enablement. The center evolved from "a digital venture to look at possibilities" to a core capability shaping global strategy. Key focus areas include precision farming analytics, soil data analysis, regenerative agriculture support, and decarbonization of the production value chain.

2

CORTEVA™ agriscience

Corteva operates a distinctive hub-and-spoke model with its Hyderabad center serving as the global hub for standardized processes, while regional centers retain ownership of locally specific requirements. As Global Services Center Leader Sandeep Mehta explained, the model explicitly distinguishes between processes "intimate with the farmer and the market" (kept local) and back-office processes with global scale potential.

4. CORE FUNCTIONAL AREAS & VALUE CREATION

Across all segments, GCCs in the food industry deliver value through six interconnected capability clusters:

Capability Cluster	Key Functions	Industry Impact
Digital & Technology	ERP modernization (SAP S/4HANA), cloud migration, cybersecurity, AI/ML engineering	Enterprise-wide digital backbone standardization
Data & Analytics	Demand forecasting, business intelligence, predictive modeling, data governance	5–10% working capital improvement; improved forecast accuracy
Finance & Shared Services	Procure-to-pay, order-to-cash, record-to-report, treasury analytics	20–40% reduction in transactional processing costs
Supply Chain Excellence	Control tower operations, network optimization, inventory planning, transportation modeling	Reduced stock-outs; real-time supply chain resilience
R&D & Innovation Support	Product formulation analytics, regulatory documentation, nutritional databases	Faster innovation cycles; reduced time-to-market
ESG & Sustainability	Emissions tracking, water stewardship reporting, sustainable sourcing analytics, carbon accounting	Regulatory compliance; investor-grade ESG reporting

5. Quantified Financial Impact

Empirical patterns across food MNCs, drawn from multiple research sources, indicate the following ranges of impact:

Impact Area	Documented Range	Primary Driver
Transactional cost reduction	**20–40%**	Labor arbitrage + process standardization
Labor cost savings vs. Western ops	**40–70%**	Geographic cost differential
Working capital improvement	**5–10%**	Improved forecasting and procurement analytics
Margin uplift from pricing analytics	**2–4%**	Revenue growth management capabilities
Reporting cycle acceleration	**30–50% faster**	Automation and data centralization
Facility downtime reduction	**~30%**	IoT-based predictive maintenance (centralized)
GCC payback period (transactional)	**18–30 months**	Shared services cost takeout

6. STRATEGIC THEMES ACROSS THE INDUSTRY

1

From Cost Arbitrage to Innovation-First

The most consistent finding across all research sources is the strategic repositioning of GCCs from cost centers to innovation engines. Carlsberg's Esther Wu stated explicitly: "The centre is about innovation, that's our primary goal. If we're looking at cost arbitrage, we'll be basically looking at consolidating instead of building something new." This reflects a broader industry consensus – while cost savings remain relevant, they are no longer the primary driver of GCC investment.

2

Talent as the Core Strategic Asset

Talent scarcity in home markets – particularly for technology, data science, and AI roles – has become the dominant driver of GCC location decisions. Carlsberg noted that "in Europe, the experience and the skills are very scarce," and has placed global leadership roles, including an AI Center of Excellence Lead, in India. General Mills' GIC employs 850 technology professionals. This represents a fundamental shift: GCCs are now sources of capability that organizations cannot replicate at home.

3

AI and Agentic Automation

Food industry GCCs are at the frontier of AI deployment. Applications documented across research sources include: generative AI for internal knowledge management (General Mills' Mills Chat), AI-driven demand forecasting across 200+ countries (PepsiCo), digital twin simulations for logistics (PepsiCo), agentic AI for autonomous task execution in merchandising and supply chain, IoT-based predictive maintenance, and computer vision for shelf health monitoring. The food industry is moving from AI experimentation to AI integration into core operations.

4

Sustainability as a GCC Mandate

ESG and sustainability have emerged as a critical focus area across all food industry GCC segments. GCCs provide the data infrastructure and analytical capabilities needed to measure, manage, and report on sustainability performance. Documented applications include carbon footprint tracking across the entire value chain, automated sustainability reporting (Nestlé), precision farming for decarbonization (Yara), circular economy engineering and recyclable packaging systems, and supplier ESG monitoring.

5

Balancing Global Scale with Local Reality

Food industry GCCs face a distinctive challenge not common in financial services or technology: the need to balance global standardization with local agricultural and consumer realities. Climate, culture, regulation, and taste preferences vary significantly across markets. Corteva's hub-and-spoke model – standardizing back-office processes globally while keeping farmer-facing activities local – represents a leading solution. Yara's evolution from one-size-fits-all digital tools to regionally adaptive approaches illustrates the learning curve involved

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7. GCC MATURITY MODEL FOR THE FOOD INDUSTRY

Research sources consistently outline a four-level maturity progression for Global Capability Centers within the food industry. This model illustrates the evolution from fundamental transactional support to advanced strategic innovation, reflecting increasing sophistication and value contribution.

Level	Designation	Characteristics	Representative Firms
1	Transactional Shared Services	Focus on basic back-office functions like Finance AP/AR, basic HR services, and payroll processing, primarily for cost arbitrage.	Early-stage or recently established GCCs
2	Process Excellence Hub	Emphasis on optimizing operations through Lean methodologies, implementing procurement analytics, and harmonizing ERP systems across regions.	US Foods
3	Digital & Analytics Engine	Development of advanced capabilities such as AI-driven demand forecasting, revenue growth management, and dedicated data science teams for actionable insights.	Nestlé, Kellogg's, Coca-Cola, Mars
4	Strategic Innovation Core	Pioneering advanced digital twin supply chains, sophisticated sustainability modeling, R&D analytics for product development, and AI-native planning solutions.	PepsiCo, General Mills, AB InBev, Carlsberg

Most leading food companies operate at Level 3 or above, with industry giants like PepsiCo, General Mills, AB InBev, and Carlsberg showcasing the most advanced strategic innovation capabilities within their GCCs.

8. RISKS AND CHALLENGES

Despite compelling benefits, GCC implementation in the food industry faces several documented challenges

Legacy ERP Fragmentation

Many food companies contend with heterogeneous legacy system landscapes, making data centralization and standardization a complex and resource-intensive task.

Change Management Resistance

Cultural friction can arise between headquarters and GCC teams, especially if GCCs are historically perceived as mere 'cost centers,' hindering collaboration and adoption.

Regulatory Complexity

Food safety, traceability, and labeling regulations vary significantly across markets, adding layers of compliance and localization challenges to centralized operations.

Talent Retention

Intense competition for specialized analytics and technology professionals in key GCC hubs, particularly in regions like India, poses a significant risk to staffing and continuity.

Over-Centralization Risk

Inappropriate centralization of processes requiring local market intimacy can lead to decision bottlenecks, reduced agility, and a disconnect from regional consumer needs.

Data Security Vulnerabilities

Centralizing sensitive consumer and operational data increases the potential impact of data breaches, necessitating robust zero-trust architectures and stringent access controls.

9. STRATEGIC OUTLOOK: 2026–2035

Research sources converge on a consistent vision for the next decade of food industry GCC evolution:

AI-Native Demand Planning

Generative AI and advanced ML models improving forecast accuracy in volatile commodity categories.

Autonomous Supply Chain Orchestration

GCCs functioning as real-time decision-making hubs, not just analytics providers.

Carbon Accounting Engines

Integrated sustainability data platforms supporting net-zero commitments and regulatory reporting.

Direct-to-Consumer Data Platforms

GCCs enabling personalized nutrition, subscription models, and DTC channel growth.

Nano-GCCs

Highly specialized, agile units focused on niche trends such as GLP-1-friendly nutrition, functional ingredients, and alternative proteins.

Pet Food GCC Expansion

As pet humanization drives premium product investment and DTC models, dedicated pet food GCC capabilities are expected to emerge more visibly.

Platform & Ecosystem Models

GCCs evolving into internal platforms integrating startups, CPG partners, and retailers.

> "We need a scale that India can provide. We're not looking at just serving part of the group. We are looking at capabilities where it serves the world."
> — **Carlsberg's Group CIO**

CONCLUSION

Global Capability Centers have become indispensable strategic assets for the global food industry. The synthesis of multiple independent research sources confirms five overarching conclusions:

Conclusion	Evidence
GCCs have fundamentally shifted from cost arbitrage to value creation	Carlsberg, General Mills, PepsiCo, and AB InBev all explicitly position GCCs as innovation-first rather than cost-first investments
Talent access drives location strategy more than cost savings	Technology talent scarcity in home markets is the primary stated driver; global leadership roles are now placed in GCC locations
Technology integration spans the entire food value chain	From precision farming (Yara, Corteva) through manufacturing (IoT, digital twins) to consumer analytics (PepsiCo, General Mills)
Sustainability has become a core GCC mandate	Documented across Nestlé, Yara, General Mills, Mars, Carlsberg, and others as a primary focus area
The pet food segment represents a disclosure gap, not an absence	Mars and Nestlé integrate pet nutrition into broader GCC structures; dedicated centers are likely but not publicly documented

For global food companies, GCCs are no longer optional cost levers. They are **strategic engines of transformation, innovation, and long-term value creation** – and organizations that elevate GCCs to this status will outperform peers in an increasingly volatile, data-driven, and sustainability-focused global food landscape.

APPENDIX: KEY COMPANY GCC PROFILES AT A GLANCE

A comprehensive overview of leading food, beverage, and agribusiness companies leveraging Global Capability Centers (GCCs) across key markets worldwide.

Company	Segment	GCC Locations	Key Capabilities	Strategic Focus
Nestlé	Packaged Foods	India, Philippines, Poland, Mexico	Finance, IT, supply chain, digital analytics	Digital backbone, demand forecasting, ESG reporting
General Mills	Packaged Foods	India (Mumbai)	Technology (850 staff), finance, analytics	SAP S/4HANA, AI (Mills Chat), supply chain
Mondelez	Packaged Foods	India (Thane, Mumbai)	R&D innovation, shared services (900+ staff)	Chocolate/beverage innovation, GBS
Kraft Heinz	Packaged Foods	India (Ahmedabad)	Global business services (1,800 planned hires)	Operational excellence, innovation
PepsiCo	Beverages	India, Poland, Mexico, Egypt	Revenue analytics, AI forecasting, automation	Margin expansion, digital twins, global scale
Coca-Cola	Beverages	India (Gurugram, 1,000+ staff), Latin America, Asia	Finance, supply chain, marketing, digital commerce	Bottler network visibility, route-to-market analytics
AB InBev	Beverages	India (Bengaluru)	Finance, analytics, supply chain, automation	AI/data strategy, real-time operational efficiency
Carlsberg	Beverages	India (Gurugram, Hyderabad)	IT, infrastructure, AI CoE	Innovation-first GCC; global AI leadership placed in India
Heineken	Beverages	India (Hyderabad, 3,000 planned)	Finance, HR, IT	APAC operational support
Mars Petcare	Pet Foods	India, Costa Rica, Europe	Procurement analytics, veterinary data, alt-protein R&D	Pet health + nutrition integration; Telangana expansion
Sysco	Food Distribution	Sri Lanka (Colombo – Sysco LABS)	AI/ML merchandising, supply chain, e-commerce	Technology heartbeat of global operations
US Foods	Food Distribution	US-centric with nearshore	Supply chain, pricing analytics, finance automation	Route optimization, dynamic pricing
Sodexo	Food Services	India (Hyderabad, Bengaluru)	Corporate catering, operational excellence	GCC ecosystem supplier + own GCC capabilities
Yara	Agribusiness	India	Digital agriculture, precision farming, decarbonization	Sustainability and AI-driven agritech
Corteva	Agribusiness	India (Hyderabad – global hub)	Global back-office; regional hubs for local processes	Hub-and-spoke model balancing global and local