Will AI Revolutionize F&B Supply Chains by 2028?

PRESCOUTER

Contents

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This isn't your typical AI article.

We've all been intrigued by the possibilities of AI, but when it comes to implementing it in our own company, it can feel overwhelming.

Consider the challenges faced by F&B companies today: managing complex supply chains, juggling perishable goods, coping with volatile demand, ensuring food safety, and striving for cost-effective efficiency. These challenges are not new; they have been the daily grind of this industry for years.

Imagine a different scenario where supply chains can operate with unprecedented precision, where demand prediction is spot on, where food safety is ensured at every step, and where inefficiencies are a relic of the past. AI promises this transformation, turning an ambitious dream into an attainable reality.

This is not your typical AI article. We're not here to dazzle you with AI's potential alone. Instead, we're here to equip you with the strategies and guidance you need to ensure that AI becomes a valuable asset for your organization, helping you achieve efficiency, resilience, and a competitive edge in your supply chain operations.

The key pain points faced by F&B companies today, and how AI holds the potential to address them:

INEFFICIENT SUPPLY CHAINS

Supply chains struggle with inefficiencies, causing waste. AI streamlines operations.

UNPREDICTABLE DEMAND

F&B wrestles with demand unpredictability. AI predicts more accurately, reducing overstocking and understocking.

FOOD SAFETY CHALLENGES

Ensuring food safety is a constant battle. AI monitors and improves safety, reducing risks.

QUALITY ASSURANCE

Consistent product quality is vital. AI maintains standards and reduces variations.

RISING COSTS

Rising costs challenge profitability. AI identifies cost-saving opportunities and enhances overall financial performance.

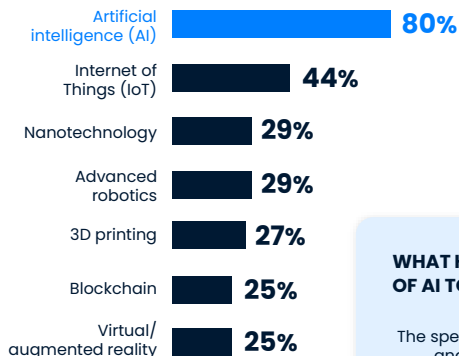**PRESCOUTER**

Most struggle to leverage AI.

Based on a survey of 700 innovation leaders at the world's top companies.

In the food and beverage industry, a significant shift is occurring as emerging technologies take center stage. Based on a survey with 700 innovation leaders at the world's top companies, **an impressive 80% of respondents acknowledge the transformative power of AI**, positioning it as a key disruptor in the sector's future.

Yet, despite AI's potential, **many companies still struggle to leverage AI towards significant cost savings or enabling new products.**
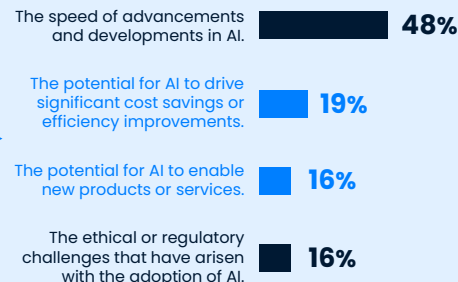
This is likely due to various challenges including data standardization, integration hurdles, and organizational resistance to change.

IN YOUR OPINION, WHICH EMERGING TECHNOLOGIES HAVE THE GREATEST POTENTIAL TO DISRUPT YOUR INDUSTRY IN THE NEXT 5-10 YEARS?

Technology	%
Artificial intelligence (AI)	80%
Internet of Things (IoT)	44%
Nanotechnology	29%
Advanced robotics	29%
3D printing	27%
Blockchain	25%
Virtual/augmented reality	25%

WHAT HAS BEEN THE MOST SURPRISING ASPECT OF AI TO DATE?

Aspect	%
The speed of advancements and developments in AI.	48%
The potential for AI to drive significant cost savings or efficiency improvements.	19%
The potential for AI to enable new products or services.	16%
The ethical or regulatory challenges that have arisen with the adoption of AI.	16%

Many companies still struggle to leverage AI towards significant cost savings or enabling new products.

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40% are skeptical.

A substantial 40% of individuals express skepticism when confronted with the term 'AI'.

According to recent data, a substantial 40% of individuals express skepticism when confronted with the term 'AI'. While it's undeniable that AI holds incredible transformative potential, it's equally important to acknowledge the doubts and uncertainties that shroud this powerful technology. This skepticism often arises from the vast disparity between the hype surrounding AI and the tangible results many have yet to witness.

As we navigate through this landscape of hype and doubt, we're compelled to explore how to harness AI's true potential and translate it into practical solutions that not only dispel skepticism but also deliver real value.

FEELING ABOUT AI

How do you feel when see/hear the marketing

| Exhausted | 12% |
Energized	14%
Skeptical	40%
Optimistic	21%
Neutral	21%

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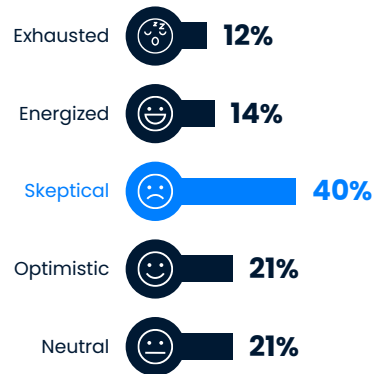
The Hype of AI

It's impossible to escape the buzz and excitement that surround AI.

In today's fast-paced technological landscape, it's impossible to escape the buzz and excitement that surround AI. The Hype Cycle for Emerging Technologies in 2023 paints a vivid picture of this phenomenon, with expectations soaring to unprecedented heights.

Gartner's positioning of Generative AI at the 'Peak of Inflated Expectations' illustrates the collective enthusiasm for what AI can achieve. It's a pivotal moment where AI's potential appears limitless, sparking conversations across industries. Yet, as we ride the wave of excitement, it's essential to remember that beneath the hype lies the challenge of translating these grand expectations into tangible outcomes.

Hype Cycle for Artificial Intelligence, 2023

Source: Gartner
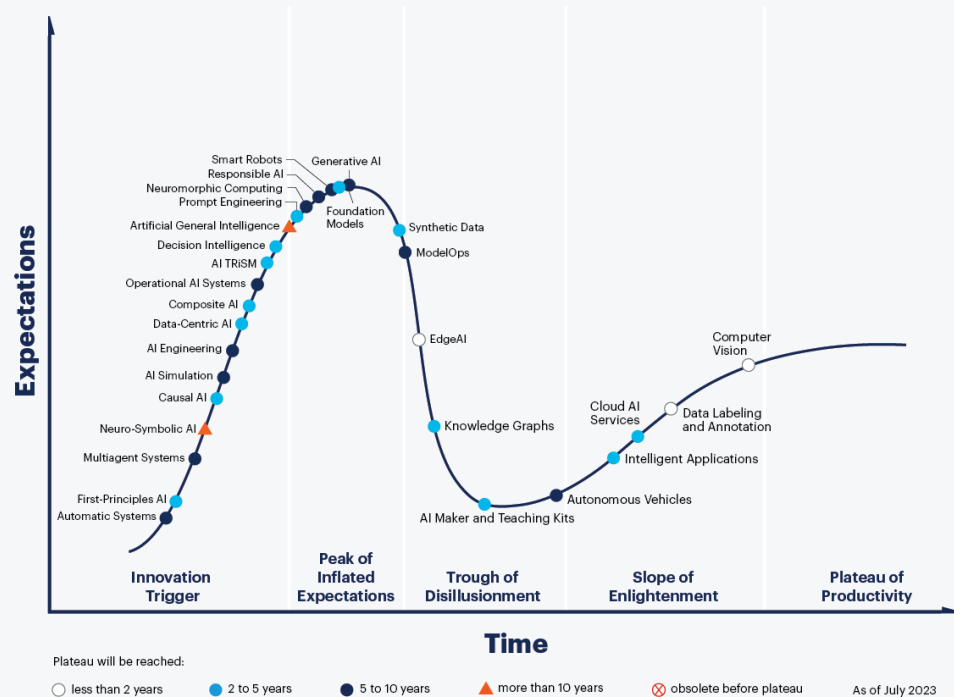
Expert Insight

AAMIR MEHDI

Director of Supply Chain, in a global F&B multinational

" AI and other big technology platforms are no longer optional.

ADEL EMAM

Chief Operations Officer (COO), JBS MENA-Seara

" I believe AI is applicable to most areas within our operations.

SANTIAGO LOPEZ DE HARO

Director Advanced Analytics Practice, Spinnaker SCA

" Analysts are emphasizing the explosive growth and significant impact of AI in the current market. It is prudent to be wary of the hype, but you cannot ignore the potential.

AI's Explosive Growth in F&B

Projected to undergo substantial expansion, **AI in the Global Food & Beverages Market is poised for remarkable growth**, with its market size projected to increase **from USD 7 billion in 2023 to USD 35 billion by 2028**. This expansion is forecasted to transpire at a **Compounded Annual Growth Rate (CAGR) of 38.3%** over the forecast duration spanning from 2023 to 2028.

2028 — US $35B
2023 — US $7B
CAGR 38.3%
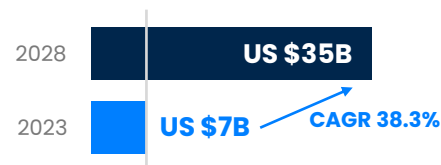
Figure. *AI in Global F&B Market Size (USD Billion)*

The Asia-Pacific region is poised to lead in the rapid growth of AI in the F&B industry, driven by advancements in AI, machine learning algorithms, and the adoption of natural language processing applications. This growth is further propelled by the widespread integration of technology and significant investments in AI research. Meanwhile, **North America ranks second globally at 29.1%**, as its readiness for AI adoption and expansion, along with the economic impact of AI-driven replacements, drive growth in the region.

High
Medium
Low
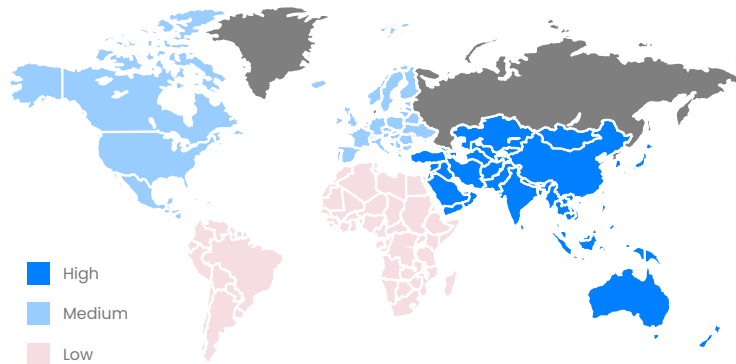
Figure. *AI in F&B market, growth rate by region*

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AI's Impact on Supply Chain

In the realm of the food and beverage sector, the integration of big data and AI has given rise to a transformative landscape that **extends across the entire value chain**. This transformation is characterized by an **accelerated market entry** and the fostering of agile supply chains that adeptly navigate uncertainty, catalyzing growth and adaptability.

AI's potential in food production is particularly noteworthy. It acts as a safeguard against errors, enhances safety measures, automates tasks, and elevates product quality. This profound potential aligns seamlessly with the synergy of predictive analytics and logistics optimization. This combination empowers businesses to confidently **navigate uncertainties and anticipate supply chain scenarios, enhancing operational efficiency and transparency**.

This transformation's tangible impact is underscored by experiences in the Consumer Packaged Goods (CPG) realm.

AUTONOMOUS SUPPLY CHAIN PLANNING SHOWCASED

up to **4%**	by **20%**	**10%**
potential revenue growth	reduction in inventory	decrease in supply chain costs

These findings bear witness to AI's profound influence on reshaping the food and beverage landscape.

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AI's Impact on F&B

The influence of big data and AI extends across the **entire F&B value chain**. This partnership yields benefits from quality control to predictive maintenance, inventory management to process optimization, product development to customer service, and sustainability.

AI's reach expands further into the intricate networks **connecting suppliers**, **producers**, and **shipping partners**, facilitating the swift balancing of supply and demand. Additionally, **AI-driven chatbots enhance communication** with suppliers and customers, streamlining order and delivery management.
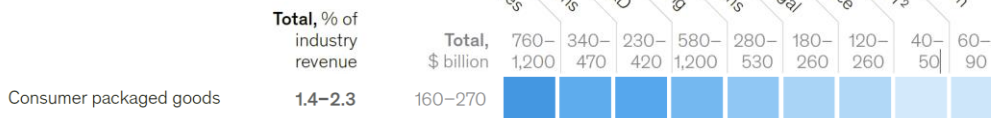
With sustainability in focus, AI emerges as a critical ally. F&B businesses can leverage AI to **optimize resource usage and reduce environmental impact, fostering a more sustainable industry**.

Collectively, the convergence of big data and AI in the food and beverage sector marks a transformative milestone. This partnership reshapes operations, enhances efficiency, and lays the groundwork for a more adaptable, resilient, and sustainable industry.

Generative AI & CPG

Generative AI productivity impact by business functions[1]

Low impact ▭ High impact

	Total, % of industry revenue	Total, $ billion	Marketing and sales	Customer operations	Product and R&D	Software engineering	Supply chain and operations	Risk and legal	Strategy and finance	Corporate IT[2]	Talent and organization
			760–1,200	340–470	230–420	580–1,200	280–530	180–260	120–260	40–50	60–90
Consumer packaged goods	1.4–2.3	160–270									

Transitioning to the next wave of innovation, generative AI emerges as a promising force, signifying a new phase of advancement. Recent insights suggest that generative AI holds the potential to significantly boost productivity within the retail and consumer packaged goods (CPG) sector. This advancement could contribute an impressive $400 billion to $660 billion to annual revenues, representing a growth rate of 1.2 to 2.0 percent.

Notably, among the various business functions, marketing and sales emerge as the most influential drivers of productivity. They contribute an impressive $760–1,200 billion in additional revenue to the CPG industry. While supply chain and operations may not claim the top spot in terms of impact, they still make a substantial contribution, ranging from approximately $280 billion to $530 billion.

Supply chain and operations make a substantial contribution, ranging from approximately

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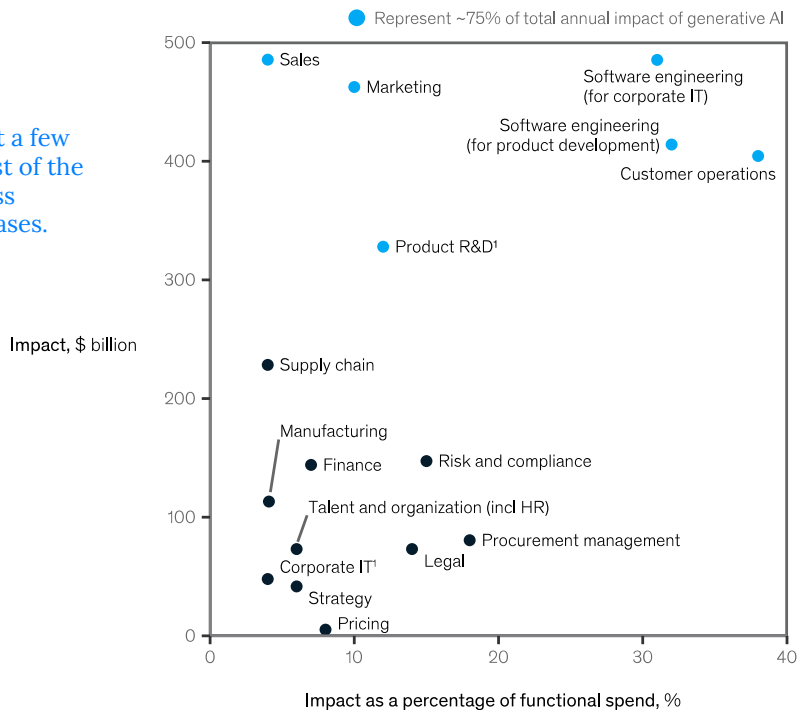
Generative AI & CPG

Using generative AI in just a few functions could drive most of the technology's impact across potential corporate use cases.

" We still need to see the results of generative AI in the supply chain.

SANTIAGO LOPEZ DE HARO

● Represent ~75% of total annual impact of generative AI

Impact, $ billion

Impact as a percentage of functional spend, %

Data points (from chart):
- Sales
- Marketing
- Software engineering (for corporate IT)
- Software engineering (for product development)
- Customer operations
- Product R&D[1]
- Supply chain
- Manufacturing
- Finance
- Risk and compliance
- Talent and organization (incl HR)
- Corporate IT[1]
- Legal
- Procurement management
- Strategy
- Pricing

Note: Impact is averaged.
[1]Excluding software engineering.
Source: Comparative Industry Service (CIS), IHS Markit; Oxford Economics; McKinsey Corporate and Business Functions database; McKinsey Manufacturing and Supply Chain 360; McKinsey Sales Navigator; Ignite, a McKinsey database; McKinsey analysis

REALISTIC EXPECTATIONS & STRATEGIES

A practical review of expected challenges and expert-driven strategies, informed by industry experience, for successful AI adoption within the supply chain.

Overcoming Challenges

As we've witnessed the struggles that many encounter in harnessing AI's potential and the skepticism that surrounds it, it's crucial to transition our focus towards the practical realities. While the promises of AI are undeniably captivating, we must now confront the challenges that companies face when striving to effectively integrate AI technologies. With AI taking center stage, successfully navigating these hurdles becomes the key to transforming skepticism and overcoming struggles into tangible benefits.

Supply chain challenges go beyond locating with real-time data. Challenges have become a global issue, and many companies now consider supply chain issues their top short- and long-term concern.

Disruptions overall are common and costly, but **many manufacturers are working on models to make supply chains and logistics more predictable by replacing manual tasks with technology like AI, data analytics, and sensors**.

Taking full advantage of computing intelligence should support identifying patterns, predicting insights, prescribing options, and improving transparency over the manufacturing process to better manage inventory in a crowded marketplace.

Mostafa El-Bagoury
CEO, *Siemens Egypt*

Challenge
Cost of implementation

HIGH COSTS OF IMPLEMENTATION

AI implementation entails substantial costs, driven by complexity and the demand for skilled personnel.

Cloud-based AI systems require significant bandwidth and specialized hardware, leading to additional financial considerations for businesses and operators.

Beyond initial investment, ongoing operational expenses contribute to the overall budget.

It is also important to be aware of the **INFRASTRUCTURE BUDGET**. Many companies that embark on their digital transformation journey create budgets and estimates of their infrastructure costs, but fail to verify these estimates on a monthly basis. This can lead to unexpected costs when they finally review their expenses. It is essential to monitor and evaluate the actual costs of services from the outset. In addition, some external software providers offer SaaS payment structures with free consulting services for a few months or a payment structure based on the infrastructure cost. This means that projects are less expensive at first, but become more expensive once user adoption takes off. **CIOs should be proactive in requesting estimates so that they are not surprised when the invoice arrives**.

When faced with these budgets, CIOs are often tempted to take the do-it-yourself approach. However, **it is important to consider the cost of time-to-market and a reliable delivery**. While the budgets for these projects may seem high initially, it **is not uncommon to find a 10x return on investment within one or two years**. **Waiting longer for their implementation is much more costly than developing them internally**.

Santiago Lopez de Haro
Director Advanced Analytics
Practice, Spinnaker SCA

Challenge
Data quality

DATA CHALLENGES

Limited and low-quality data availability impacts effective AI implementation.

Concerns about data privacy and security necessitate careful considerations.

Difficulties in data governance and standardization need to be addressed.

In some cases, projects progress beyond the proof of concept stage only to realize later that the problem doesn't require the full capabilities of an AI solution. At that point issues like insufficient or unreliable data can render the AI capability useless and prevent it from reaching its true potential.

Aamir Mehdi
Director of Supply Chain,
Global F&B company

Challenge
Data quality

Limited and low-quality data availability impacts effective AI implementation.

Concerns about data privacy and security necessitate careful considerations.

Difficulties in data governance and standardization need to be addressed.

The most typical issue is **DATA QUALITY**. Garbage in, garbage out. It does not matter how good your algorithm is, if the data you are feeding it is wrong, you cannot expect better results. I have seen many customers who made a big investment in data capture but do not budget for the time they are going to dedicate to cleanse it. **There is a statistic out there**: data scientists dedicate much longer to identify exceptions and data quality gaps and 20% to actually build the machine learning model. This problem is much smaller if the organization is already consuming the data for some other process. Usually, the managers of this process have done a good job of "curating" this data capture process. This data quality issue usually leads to datasets with low depth (little history to learn from).

However, the good thing about the world of supply chain is that **a vast amount of data is being generated on a daily basis**. This means that **you don't have to rely on data from years ago to understand the consequences of a two-week delay at a port**. Instead, you can easily extrapolate results from recent data. **This is one of the reasons why Supply Chain management is one fields where AI has the most potential.**

*Data scientists dedicate much longer to identify exceptions and data quality gaps and **20% to actually build the machine learning model.***

Santiago Lopez de Haro
Director Advanced Analytics
Practice, Spinnaker SCA

Challenge
Disparate systems

SYSTEM CHALLENGES

Integrating AI into supply chain management across ERP, Transformation, and Warehouse Management Systems is complex.

Collecting and organizing diverse supply chain data sources, including customer and vendor data, poses challenges.

Another challenge is the fact that systems used in supply chain management are often disparate. At the very least, you need data in the ERP, but you may also need data in the Transformation or Warehouse Management Systems. Additionally, we know that having visibility into customer and vendor supply chain data can provide incredible benefits for managing the supply chain, but this data is even harder to collect and organize. **Creating a unified federated data lake that integrates these systems and is useful for historical analysis is a complicated challenge**. It is not rare to find large organizations getting stuck for months and years in the design and architecture of their data lake.

Santiago Lopez de Haro
Director Advanced Analytics
Practice, Spinnaker SCA

Challenge
Skill adaptation & lack of AI expertise

SKILL ADAPTATION AND AI SPECIALIST SCARCITY

Integrating AI and automation demands employees to acquire new skills.

Adaptation to unfamiliar workflows may lead to time consumption and occasional frustration.

The scarcity of AI specialists underscores the need for tailored training and upskilling initiatives.

Fostering collaboration and knowledge exchange among teams and departments becomes pivotal.

One of the main challenges is the lack of awareness among people in the industry regarding the integration of AI. **It is crucial to have individuals with industry experience who can effectively implement AI solutions**.

Adel Emam
Chief Operations Officer
(COO), JBS MENA-Seara

Expert Strategy

Challenge
Skill adaptation &
lack of AI expertise

It's important to resist the temptation to jump to vendors and solutions right away. Instead, **spend time articulating the problem you're trying to solve and determine if AI or machine learning are even practical**. **Educating your team** and **articulating the problem** will lead to better conversations with vendors and more efficient engagement.

Aamir Mehdi
Director of Supply Chain,
Global F&B company

Change management is usually the hardest challenge. **The organization, as a whole, needs to get educated in one or more new domains**. CIOs are facing a struggle in this regard. They can either develop a **data citizenship approach**, where they **invest in applications to facilitate data analysis for business users**, or they can **recruit data scientists** from outside and **train them in the data model and business processes**. Neither solution is easy.

Usually, the best approach is a **hybrid of both**. But, even then, you need change catalysts: people who are familiar with all the data and business domains and who are able to communicate the project's requirements at all levels. These are rare profiles, but can be hired from external supply chain management consulting companies specialized in analytics.
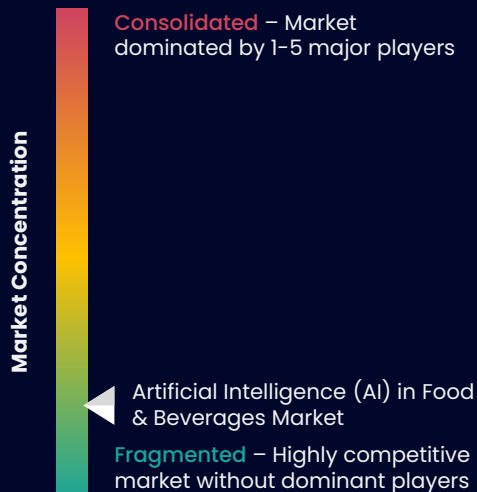
Santiago Lopez de Haro
Director Advanced Analytics
Practice, Spinnaker SCA

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Challenge
Selection of AI solution partners

Consolidated – Market dominated by 1-5 major players

Market Concentration

◄ Artificial Intelligence (AI) in Food & Beverages Market

Fragmented – Highly competitive market without dominant players

Source: Mordor Intelligence

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CHALLENGES IN SELECTING AI PARTNERS

The AI market is fragmented with many AI solution partners, making it essential to conduct thorough research and evaluation.

Clearly defining an organization's precise AI needs and objectives can be challenging, leading to potential misalignment with chosen partners.

Evaluating the technical expertise and capabilities of potential AI partners can be difficult, especially for organizations lacking AI knowledge.

Seamlessly integrating AI solutions into existing systems and processes may pose challenges and risks of disruption.

It is important to ensure that vendors have a track record of successful implementations in other companies. This provides confidence in their ability to deliver results. References are the top priority. Secondly, when it comes to AI investments, companies need assurance that the vendors have a clear vision and a capable team to drive the project forward... **For effective communication, it is beneficial for the company to have local representatives in the area**.

Adel Emam
Chief Operations Officer (COO), JBS MENA-Seara

Challenge
Selection of AI solution partners

Supply chain processes are constantly evolving, and many new solutions that claim to offer AI deliver a rather static machine learning (ML) model that assumes static parameters where it should not. Very few of these solutions take into account the dynamics of supply chain processes: data drift, feedback capture, and continuous improvement. The ML model is trained only once, at implementation time, and is left untouched forever after. Unfortunately, most standard software solutions on the market do not address these long-term maintenance needs and do not account for the need to keep these solutions updated.

Even if you choose a good, pre-packaged software solution with a good support and maintenance contract, you will likely need to engage consulting services. You are going to want to work with supply chain management consultants who have **experience with data analysis** and **AI** and understand your business problems. **They will help you identify and prioritize projects, design and implement solutions, and communicate your "wins" internally**. Same as in Lean implementations, where you need "Black Belts", i.e., experts in supply chain digital transformation.

Santiago Lopez de Haro
Director Advanced Analytics
Practice, Spinnaker SCA

CASE STUDIES – FROM CONCEPT TO REALITY

A closer look at real-world success stories, showcasing how AI transforms supply chains in the F&B industry, from concept to tangible outcomes.

Challenge

How can we enhance customer service, reduce cost, and increase productivity using AI?

In the dynamic Food & Beverage industry, AI is pivotal for reshaping supply chains. **Mars Wrigley aimed to enhance customer service, reduce cost, and improve productivity** within the company by implementing AI.

They **collaborated with Aera Technology in 2020**, which paved the way for AI-driven solutions that optimized inventory, detected supply chain issues, and refined decision-making processes. Through Aera's advanced analytics, Mars Wrigley elevated their operational agility and achieved impressive results.
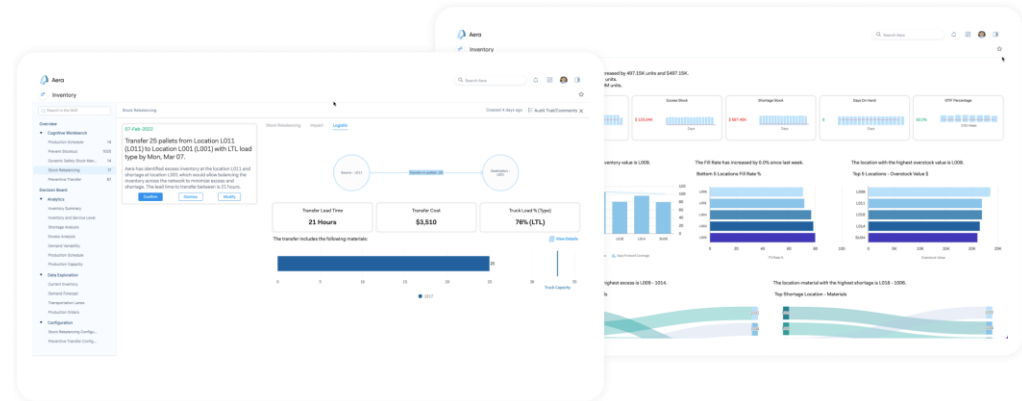
MARS

AI Solution → Aera 🔗

6 ways AI impacted MARS's supply chain

SUPPLY CHAIN EFFICIENCY

Aera Technology used AI algorithms, referred to as Aera Skills, to detect potential supply chain issues and provide solutions. This automation streamlined decision-making, enabling faster responses to challenges and reducing manual intervention.

1

SHORT-TERM PLANNING

Aera's platform enhanced the company's ability to predict and manage supply chain problems in the 0-to-12-week horizon. This was particularly valuable for ensuring product availability and minimizing disruptions.

2

ROOT CAUSE ANALYSIS

Aera Skills pinpointed causes of service cuts and revenue losses through daily order data, enhancing insights into bottlenecks and inefficiencies.

3

IMPROVED TRUCK UTILIZATION AND CUSTOMER SERVICE

By optimizing inventory and addressing root causes, Mars lifted truck use to 95% from the mid-80s, yielding major cost savings, reduced emissions, and 2% higher customer service, bolstering revenue.

4

ENHANCED DECISION-MAKING

Aera's automated solutions fed back into source systems, providing real-time insights, and expediting responses to supply chain issues.

5

INVENTORY REBALANCING

Aera Skills optimized inventory distribution, factoring in cost and service impacts, boosting management quality and customer service while cutting costs.

6

Challenge

How can we enhance efficiency and maintain high food quality by replacing manual processes?

Tyson Foods Inc., as a global food company and leader in protein, **seeks to enhance efficiency and maintain high food quality by replacing manual processes** like inventory counting and machine inspections with automated solutions that offer near real-time insights at scale.

They **collaborated with Amazon Web Services (AWS)**. To boost efficiency, Tyson adopted AWS's ML-powered CV solutions. The solutions help them automate tasks, enhance operational efficiency, and deliver substantial cost savings. They offered **instant insights into production quantities, facilitating effective decision-making and preventing overproduction or underproduction**. This strategic partnership between Tyson Foods and AWS exemplifies how advanced AI technologies can revolutionize efficiency, accuracy, and decision-making within the food production industry.

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2 ways AI impacted Tyson Foods's supply chain

AI Solution

🔗

AUTOMATING TIME-CONSUMING MANUAL PROCESSES

Having faced challenges due to labor-intensive inspection processes in its facilities, the team at Tyson Foods sought to apply **Computer Vision (CV)** solutions to enhance efficiency. **Collaborating with AWS, they pursued CV solutions powered by ML for inventory management and identification of product carrier failures**.

IMPROVING PRODUCTION EFFICIENCY

In collaboration with Amazon ML Solutions Lab, they **developed an object detection model using Amazon SageMaker to automatically count chicken trays**. This model, deployed with AWS Panorama, **provided real-time insights into production quantities**. Additionally, they used **Amazon Lookout for Vision to automate the identification of faulty plastic pins holding product carriers**. This ML solution **assessed images and used AWS Panorama Appliance to alert employees**, resulting in substantial time savings and enhanced productivity, ultimately conserving 15,000 hours of skilled labor per year at a single facility for the company.

SAVED

15,000 hours of skilled labor per year at a single facility for the company.

Challenge

Traditional paper-based tracking and manual decisions were slow and ineffective in managing disruptions.

As industries advance, merging technology with sustainable practices becomes crucial. **Campbell discovered that traditional paper-based tracking and manual decisions were slow and ineffective in managing disruptions**. To tackle this, Campbell's adopted Everstream's tech-driven solution.

This digital collaboration also involved overseeing facility conditions, rail hubs, and shipping routes. This proactive approach **safeguarded shipments from freezing and the digitized risk system provided a global perspective on potential disruptions**, whether from extreme temperatures or unforeseen events.

5 ways AI impacted Campbell's supply chain

AI Solution

WASTE REDUCTION & COST SAVING

The implementation of Everstream's analytics led to a notable reduction in the number of frozen soup can shipments. This prevented product wastage and translated into substantial cost savings.

1

RISK MITIGATION

With insights from Everstream Analytics, Campbell's could directly identify shipments at risk of freezing and take immediate corrective actions, preventing wastage and ensuring product quality. According to Everstream, **companies often cut their disruption assessment time by 50% to 70% and reduce revenue loss by 30%.**

2

REAL-TIME RISK MONITORING

Campbell's gained access to real-time insights into the conditions of their facilities, rail hubs, and shipping routes. This real-time monitoring helped them proactively identify potential risks and adjust their operations accordingly.

3

OPERATIONAL EFFICIENCY

By streamlining risk mitigation processes and decision-making through data-driven insights, Campbell's witnessed improved operational efficiency, reducing downtime and enhancing overall supply chain performance. **Everstream states that clients often achieve 5% improvements on-time performance**.

4

DATA-DRIVEN DECISION-MAKING

By shifting from manual paper-based processes to data-driven decision-making, Campbell's was able to make more informed and accurate choices, reducing the reliance on guesswork and increasing operational efficiency.

5

Challenge

Elevating procurement and sourcing through AI

Amidst the changing dynamics of procurement and sourcing, AI is being harnessed for strategic thinking. Coca-Cola has embraced AI to revolutionize its **procurement and sourcing** processes by optimizing decision-making, streamlining operations, and mitigating risks in the supply chain landscape.

Keelvar, through its "**intelligent sourcing**" platform, assisted Coca-Cola in **streamlining procurement processes**, leading to standardized data, improved sourcing recommendations, and automated bid cleansing, ultimately enhancing operational efficiency and risk mitigation in the supply chain.
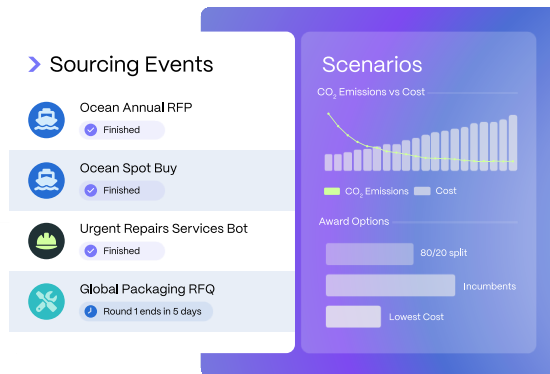
5 ways AI impacted Coca-Cola's supply chain

STREAMLINED BIDDING

Keelvar's platform enabled Coca-Cola to efficiently analyze supplier bids and generate various awarding scenarios, leading to quicker and more informed procurement decisions.

1

SUPPLY CHAIN VISIBILITY

Coca-Cola gained improved visibility into their supply chain, allowing them to track the location of containers and trucks, and assess supplier performance in real-time.

2

ENHANCED EFFICIENCY

The automation of bid cleansing processes reduced manual intervention, saving time and resources during complex procurement events.

3

COST OPTIMIZATION

Matrix-style pricing analysis allowed for a granular breakdown of material costs, optimizing cost structures by considering raw materials, conversion, and logistics expenses.

4

RISK MITIGATION

Keelvar's AI-driven insights aided in identifying potential risks in the supply chain, helping Coca-Cola proactively address challenges and minimize disruptions.

5

*In general, Keelvar's Autonomous Sourcing solution **enables teams to reduce tactical workload by up to 90%** and **costs by up to 25%**, as found in their 2023 Voices of Sourcing Report.*

AI Solution

Keelvar 🔗

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Challenge

How can we improve inventory management, reducing substitutions, and minimizing food waste?

Modern Milkman aimed to **tackle sustainability and logistics challenges**, particularly focusing on **improving inventory management**, **reducing substitutions**, and **minimizing food waste**.
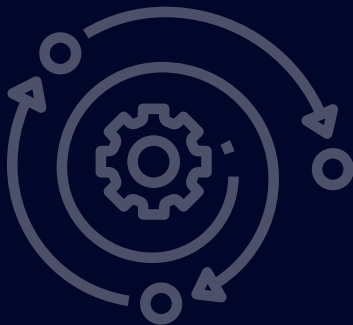
By leveraging **Peak's AI platform**, they crafted machine learning models for **precise supplier orders** and **reduced substitutions, cutting down food waste**. This collaboration led to significant achievements for Modern Milkman, underscoring the potential of AI for its sustainability and delivery goals.

AI Solution

4 ways AI impacted Modern Milkman's supply chain

DEMAND FORECASTING AND INVENTORY OPTIMIZATION

By harnessing the capabilities of Peak's AI platform, the company initiated a journey driven by data insights. This led to the development of demand forecasting models, empowering them to precisely anticipate product requirements.

1

EFFICIENT DELIVERIES (3X INCREASE)

The streamlined supply chain drives a threefold increase in weekly deliveries, aligning with their commitment to providing farm-fresh products to customers' doorsteps in a timely manner.

2

SIGNIFICANT WASTE REDUCTION

The solution leveraged advanced ML algorithms to analyze data from supply networks and local grocery hubs, optimizing inventory planning, and ensuring the right products were available at the right time, thereby minimizing stockouts and overstock situations, contributing to **saving over 55 million plastic bottles** through the company's reusable glass bottle delivery system.

3

CUSTOMER SATISFACTION

AI-driven demand forecasting enabled The Modern Milkman to curate orders tailored to customer preferences, significantly reducing food waste. The integration of warehouse and supply data, along with shelf-life information, ensured minimal to no substitutions for customers, minimizing food spoilage and enhancing customer satisfaction.

4

Challenge

Inaccuracies in travel distances and time estimates leading to delayed deliveries.

Amidst the landscape of Malaysia's coffee scene, ZUS Coffee has emerged as a tech-driven disruptor, making specialty coffee accessible to all. As demand surged and delivery operations intensified, **ZUS Coffee** saw **inaccuracies in travel distances and time estimates leading to delayed deliveries**.

To overcome the challenges, ZUS Coffee embraced NextBillion.ai's solution for order allocation and dispatching. The partnership fueled the company's ability to meet delivery KPIs, reduce delivery times, and enhance customer experiences. With this partnership, ZUS Coffee not only delivers specialty coffee but does so with a high level of efficiency that drives business growth and customer satisfaction.

Source:
nextbillion.ai

3 ways AI impacted ZUS Coffee's supply chain

OPERATIONAL EFFICIENCY & COST REDUCTION

Through NextBillion.ai's Distance Matrix API, ZUS Coffee gained access to accurate map data, resolving inaccuracies in travel distance and time estimates. This enabled precise order allocation and route planning, resulting in optimized delivery operations. The impact was significant operational cost savings, reduced fuel consumption, and improved eco-friendly practices, enhancing the company's profitability and sustainability.

1

ROUTE OPTIMIZATION & ENHANCED CUSTOMER SATISFACTION

The synergy of accurate map data and precise ETAs allowed ZUS Coffee to reduce delivery times substantially. Comprehensive route optimization based on factors like traffic rules and vehicle types led to faster deliveries. As a result, customers received fresh coffee more promptly, improving the overall customer experience.

2

MEETING DELIVERY KPIs

ZUS Coffee could generate accurate Estimated Time of Arrival (ETAs), factoring in diverse variables. Consistently meeting on-time delivery KPIs elevated the company's reputation. Enhanced customer satisfaction, positive reviews, and customer loyalty were direct outcomes, driving growth and success.

3

NextBillion.ai played a pivotal role in ZUS Coffee's expansion, enabling them **to grow from a single store in 2019 to over 130 stores by 2022.*

ZUS COFFEE

AI Solution

next billion.ai

PRESCOUTER

Challenge

How we can Improve "best before" dates for strawberries using AI scanners?

Addressing food waste is vital to reduce losses from spoiled food. ⅓ **of food, costing $1 trillion annually, is lost, with nearly 40% of it being fresh produce**.

OneThird, a food tech company, partnered with the fruit producer, **Bakker Barendrecht**, to **improve "best before" dates for strawberries using AI scanners**. This optimizes shipping by reducing distances. **Real-time data on strawberry shelf life led to accurate date adjustments, better shipping choices, and improved logistics**. This success resulted from years of collaboration, paving the way for wider use in estimating perishable produce shelf life. The partnership showcases AI's transformative role in supply chains, enhancing sustainability and providing fresher produce for customers.

4 ways AI impacted Bakker's supply chain

WASTE REDUCTION

The AI-powered technology enables Bakker Barendrecht to accurately estimate the remaining shelf life of strawberries in order to adjust shipping decisions, reducing waste due to spoilage. OneThird's technology is proven to eliminate up to 25% waste across the produce supply chain, potentially saving millions of pounds (€34.5M or $37.3M) worth of strawberries annually in the U.K. alone.

1

IMPROVED CUSTOMER SATISFACTION

By delivering fresher, higher-quality strawberries, Bakker Barendrecht enhanced customer satisfaction. Consumers received products that met or exceeded their expectations, leading to increased loyalty and a positive brand perception.

2

OPTIMIZED LOGISTICS

With real-time quality and shelf life data, Bakker Barendrecht could make better-informed decisions about transportation and distribution. This optimization of logistics helped ensure that strawberries were delivered at their optimal freshness to consumers.

3

OPERATIONAL EFFICIENCY

Accurate shelf life estimation and real-time data enabled Bakker Barendrecht to plan its operations more efficiently. This included managing inventory, scheduling deliveries, and coordinating with retailers.

4

*OneThird aims to address the global food waste challenge, where up to ⅓ of food, costing $1 trillion annually, is lost, with nearly 40% of it being fresh produce.

AI Solution

BAKKER

Onethird

PRESCOUTER

Expert Insight

" Within the Digital Supply Chain space, I have led work across three technology platforms: AI/machine learning, robotic process automation, and advanced analytics. We have also explored concepts of augmented reality in warehousing, albeit on a very conceptual stage.

Without going into sensitive details, I can share some generic areas of activity. **Demand sensing** for a more agile response to unexpected changes, **combining AI with image recognition technology** to step change on shelf presence, **deploying predictive maintenance regimes** to avoid expensive, **unexpected breakdowns in factories**, and **exploring more intelligent interactions with customers using smartbots**.

Aamir Mehdi
Director of Supply Chain,
Global F&B company

AI Shapes Supply Chains' Adaptability

AI isn't just a concept; it's a transformative force reshaping the landscape of the Food & Beverage industry

The stories of Mars Wrigley, Tyson, Campbell's, Coca-Cola, Modern Milkman, ZUS Coffee, and Bakker Barendrecht, as well as our expert, Aamir Mehdi, have showcased the remarkable outcomes achievable through AI-driven supply chain optimization in various aspects:

Cost reduction	Quality control	Operational efficiency
Risk Mitigation	Sustainability	Strategic sourcing & procurement
Logistical planning	Production efficiency	Customer satisfaction

As traditional approaches grapple with increasing complexities, AI emerges as the tool driving efficiency, agility, and precision. By harnessing predictive analytics and automation, **AI empowers decision-makers with actionable insights**. From optimizing inventory and reducing waste to enhancing customer experiences and ensuring sustainability, AI is revolutionizing the industry, where **supply chains are not just intelligent, but adaptable to the demands of the market**.

PRESCOUTER

Expert Insight

The speed of change in the AI environment may not align with what end users are trying to solve for. It could be more recreational or experimental, as seen with ChatGPT. **Industries need to be ready to adapt**, but not in a trial-and-error or wholesale manner alone. **To have some control over how external changes impact your company or industry, you need to embrace AI without fear or desperation**, but also keep pace with the changing landscape.

Aamir Mehdi
Director of Supply Chain,
Global F&B company

THE FUTURE OF AI

A quick overview of AI development roadmap, future trends and experts' visions for the future.

Human + AI

It is often thought that AI technology would lead to job displacement. However, it's important to stress that AI is a complement to human expertise, not a substitute. Human-AI collaboration capitalizes on the strengths of both, creating a synergy that drives innovation.

While AI can handle repetitive and data-intensive tasks, humans provide context, intuition, and ethical judgment. The collaboration between human professionals and AI technologies results in a more comprehensive and holistic approach to problem-solving and decision-making.

I don't believe that AI is here to take away all human jobs any more than automation did for manufacturing. It's a natural evolution, and just worrying about it isn't productive. However, **in order to embrace AI, it's important to understand what it's all about**.

Aamir Mehdi
Director of Supply Chain,
Global F&B company

Expert Insight

To quote Prof. Michael Wade of IMD, **the disruption vortex is inevitable, as we have already witnessed for industries like financial services, entertainment, and technology**. However, asset-heavy primary industries like home and personal care, CPG, or logistics might have the luxury of more reaction time before disruption hits. But it's still inevitable. If the big names in an industry don't keep up with the pace of change, new leaders will emerge, driven by the end customer's preference for service and experience over just the product.

Aamir Mehdi
Director of Supply Chain,
Global F&B company

Supply chain innovation through collaboration

AI offers supply chain professionals the ability to make data-driven decisions with greater precision. By automating routine tasks and analyzing complex data patterns, AI enables professionals to focus on strategic tasks that require creativity, critical thinking, and nuanced decision-making.

This shift allows supply chain experts to allocate more time to optimizing processes, building relationships, and innovating within the industry.

A resilient supply chain requires strong collaboration with data science and automation. The path of digitalization and understanding customer pain points to solve challenging problems to develop new products will be an asset in the future.

Shruti Biyani
Senior Research Specialist, Dow

I envision a resilient supply chain as one where the entire ecosystem innovates and transforms at the same pace. Transformation, digital or otherwise, when it happens in silos, can cause unwelcome disruption rather than harmony. Hence, a resilient supply chain focuses on collaboration and transforming together to achieve the full potential of the ecosystem.

Chulanga Perera
Chief Transformation Officer & Head of Strategy, Daimler

PreScouter - State of Innovation: 2023 and Beyond

AI EVOLUTION
From Now to Autonomy

2023 - 2025

Short-term

▸ Generative AI models **advance inventory forecasting** in supply chains.

▸ An emerging technique called federated learning ensures coll**aborative model training** while **safeguarding sensitive supply chain data**.

▸ Explainable AI methods **enhance transparency** in decision-making for efficient logistics.

▸ Edge AI adoption allows **real-time inventory management on IoT devices**, reducing reliance on constant internet connectivity.

2025 - 2028

Mid-term

▸ Advanced Generative AI **optimizes supply chain operations** and product innovation.

▸ Improved federated learning **scales cooperative systems**, aiding logistics efficiency and food quality control.

▸ **Explainable AI becomes standard**, fostering **trust in AI-driven decisions** for supply chain optimization.

▸ Evolving Edge AI on local devices ensures **swift data processing, benefiting logistics and quality assurance**.

2028 - 2030

Long-term

▸ **AI-created content reaches the sophistication of humans**, transforming product development and customer experiences

▸ Federated learning becomes a cornerstone for **adaptable solutions** across supply chains while **prioritizing data privacy**.

▸ Explainable AI integration becomes indispensable, guiding decision-making in every supply chain facet.

▸ Advanced Edge AI empowers **autonomous decision-making and real-time monitoring**, enhancing operations in diverse supply chain environments.

# Executives Prioritize AI Investments

A substantial **46% of supply chain executives** are poised to **prioritize investments in AI**, **cognitive computing**, and **cloud applications** as the cornerstones of their digital operations strategy for the **next three years**.

Chief Operating Officers (COOs) and Chief Supply Chain Officers (CSCOs) are increasingly turning to AI and cognitive computing as potent tools to tackle a spectrum of end-to-end supply chain process challenges, recognizing the immense value it can bring to their operations. The transformative potential of AI extends far beyond operational efficiency. It envisions a future where the F&B industry operates seamlessly, responding intuitively to changing demands and market dynamics.

Based on my 25 years of experience, **the main focus is on how AI can integrate the entire food supply chain**, from raw material sourcing to manufacturing processes and ultimately to product display in supermarkets...**with AI, we can create a unified dashboard that integrates all the data and streamlines the entire food chain**. While AI can certainly address specific pain points within each area, **the main benefit lies in integrating the entire food chain**.

Adel Emam
Chief Operations Officer
(COO), JBS MENA-Seara
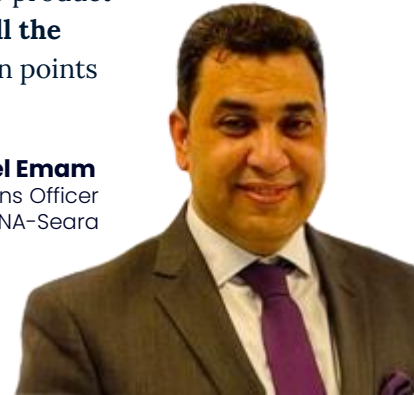
Maximizing AI's Potential: Strategy Matters

AI's impact on the F&B industry spans beyond disruption, nurturing innovation and collaborative networks for continuous evolution.

AI holds immense potential to revolutionize critical areas, including supply chain management, demand prediction, food manufacturing, safety, and personalized nutrition. In order to leverage AI's capabilities and effectively navigate disruptive technologies, companies must acknowledge the following aspects and implement appropriate measures:

EMBRACE DIGITAL TRANSFORMATION AND AI: The COVID-19 pandemic has highlighted the urgency for businesses to innovate and adapt. AI offers a strategic fit for businesses to evolve and avoid stagnation in a rapidly changing market.

SHIFT FROM HUMAN-RELIANT PROCESSES TO AUTOMATION: AI can disrupt traditional business models by automating tasks that previously relied on human involvement, leading to enhanced efficiency and cost-effective solutions.

FOSTER CONTINUAL INNOVATION: To avoid innovation apathy and strategic myopia, businesses must consistently evolve on the innovation continuum, embracing disruptive technologies to position themselves at the forefront.

LEVERAGE COLLABORATIVE NETWORKS AND CO-CREATION: Collaborative platforms like crowdsourcing and social media enable the co-creation of resources, fostering innovation and the acquisition of external knowledge.

IMPLEMENT EFFECTIVE GOVERNANCE AND MANAGE TRADE-OFFS

Implementing robust governance structures is essential for managing trade-offs between value drivers and societal benefits. As Generative AI improves, it requires more rigorous quality checks to determine if the created content is based on facts or assumptions. It also increases the risk of cyber attacks, leading to more potential security and privacy issues. Proper governance ensures a balance between the advantages of innovation and ethical considerations, while effectively mitigating risks.

EMBRACE A RESPONSIVE BUSINESS INNOVATION MODEL

The responsive business innovation model integrates AI and digital technologies to revolutionize customer experience and streamline operations. For instance, service bots and robotic process automation (RPA) enhance personalization and standardize processes, respectively.

RECOGNIZE THE VALUE OF HUMAN CAPITAL

While AI automates routine tasks, human skills, and expertise remain indispensable for innovation and value creation. Investing in talent development and fostering a creative work environment is crucial for sustainable success.

ESTABLISH A CENTER OF EXCELLENCE (COE)

A dedicated COE empowers organizations to handle future innovation needs, providing the necessary methodology, skills, tools, and governance framework for collaboration, economies of scale, and high-value service delivery.
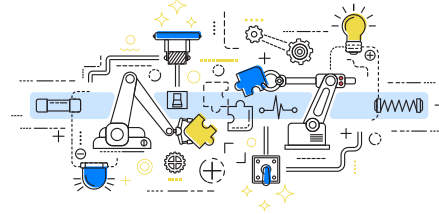
EMPHASIZE THE VALUE CREATION CYCLE AND ARCHITECTURE

Thorough assessment of contextual factors and unbiased decision-making aligned with ESG values and goals are crucial for realizing the benefits of value creation, which may take time to materialize.

EXPLORE EMERGING TECHNOLOGIES AND ADDRESS REGULATORY CONSIDERATIONS

Further research is needed to explore the potential of emerging technologies such as blockchain and crowdsourcing. Regulatory frameworks should be in place to safeguard consumer privacy and prevent misuse of these technologies.

The Path Forward

The world of AI in the F&B industry holds the power to truly revolutionize our operations

In conclusion, the world of AI in the F&B industry is no longer just a fascinating concept—it holds the power to truly revolutionize our operations. From supply chain management and demand prediction to food manufacturing, processing, safety, and quality assurance, AI offers practical solutions that can transform how we do business. By embracing AI-driven systems, we can optimize our processes, boost efficiency, and even tackle challenges like labor shortages with cost-effective measures. We can empower our teams to achieve more, delivering improved quality, cost reductions, and effective risk mitigation.

If you're ready to embark on your own AI journey and explore the practical steps to successfully integrate AI into your organization, we are here to help. As a research and consulting firm, we have the expertise to guide you through this transformative process. Let's collaborate to unlock the full potential of AI, driving measurable ROI for your company, and embrace a future where success and innovation go hand in hand in the F&B industry.

Now, let's dive deeper into our AI capabilities and discover how they can empower your business.
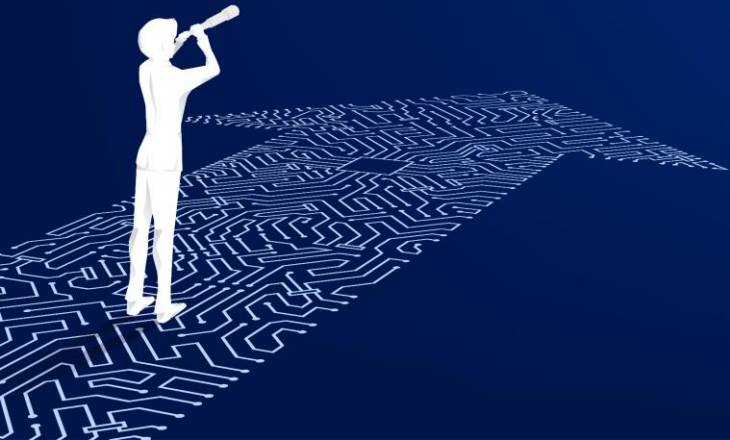
BEGIN YOUR AI JOURNEY WITH US

Breaking the mold of consulting with flexible solutions, targeted recommendations, and dynamic insights, empowering you to stay ahead in understanding consumer perceptions, optimizing processes, and securely leveraging ChatGPT technology...all at a rate more cost-efficient than one new hire.

AI-Enabled Consumer Insights (AICI)

AICI leverages AI and PreScouter's analysts to provide valuable insights on consumer sentiment, interest levels, and usage context, helping you gain a competitive edge in understanding consumer perceptions of various topics, compounds, ingredients, and product formats.

ASK US ABOUT OUR AI CAPABILITIES

AI & Computer Vision Development Service Options

PreScouter is helping one of the biggest cheese manufacturers cut waste, improve product quality, and integrate machine learning into their production lines. All for what? To get the perfect slice of cheese each time and every time!

VIEW CASE STUDY

AUXZEE: ChatGPT for companies

Auxzee is a secure ChatGPT layer-on tool developed by PreScouter, designed to meet the needs of organizations by providing a safe environment for using ChatGPT technology and querying their own data without the risk of data exposure.

WHY AUXZEE?

> "Used strategically, AI will enable organizations to drive real-world outcomes and practical innovation. Our approach to AI at PreScouter is pragmatic and results-focused; by deeply understanding each client's needs, we can then identify and apply the right AI approach to solve their unique challenges.
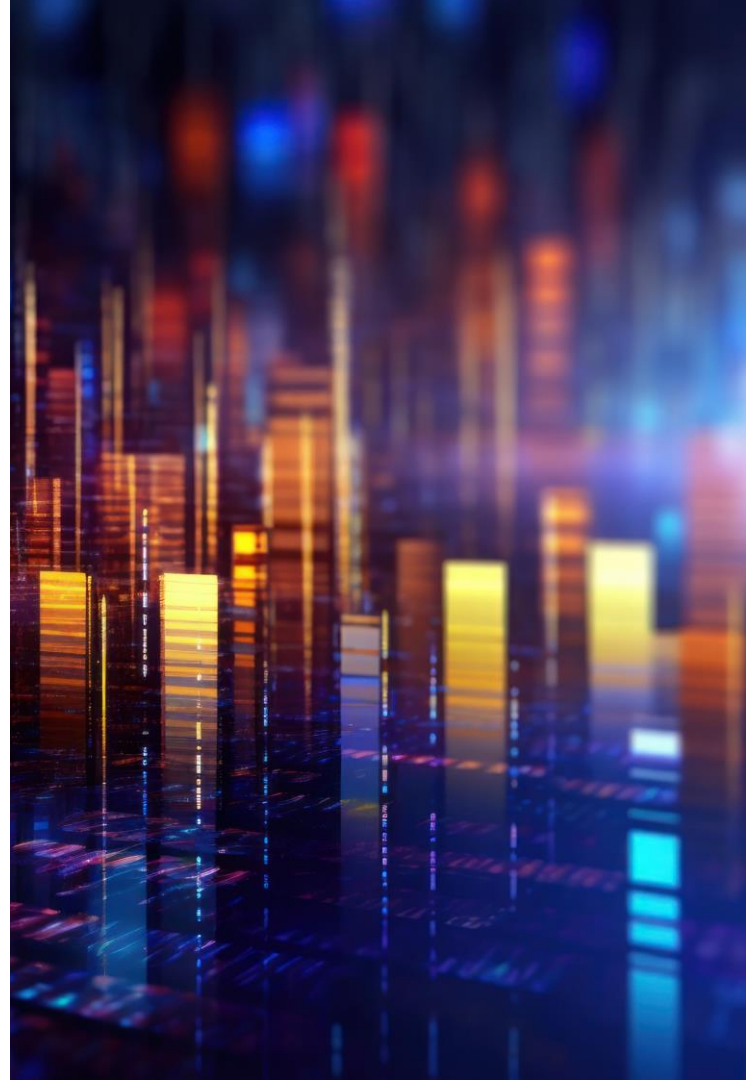
Charles Wright, PhD
Director of Data Innovation, PreScouter

Expert Insight

PRESCOUTER

BEGIN YOUR AI JOURNEY WITH US

Using AI and machine learning, our AICI tool analyzes diverse consumer data sources to enable personalized decision-making, helping you understand consumer preferences and adapt to changing market dynamics.
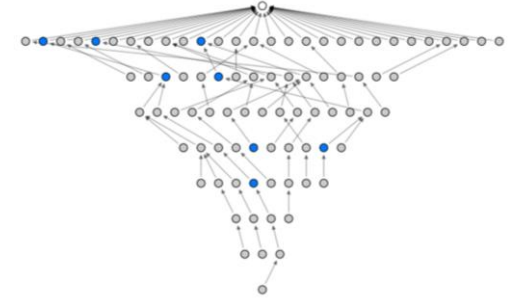
AI Enabled Consumer Insights (AICI)

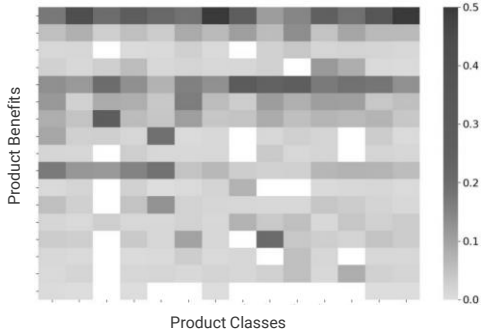AI & Computer Vision Development Service Options

AUXZEE: ChatGPT for companies

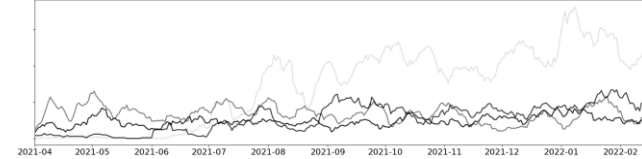
Identify Target Consumer Groups

Find Relevant Content from Conversations

Find Patterns in Consumer Use Cases

Monitor Trends in Sentiment over Time

ai@prescouter.com

PRESCOUTER

PreScouter's AI expertise was showcased through a successful custom solution for a global dairy company, reducing costs and errors in cheese production.

AI Enabled Consumer Insights (AICI)

AI & Computer Vision Development Service Options

AUXZEE: ChatGPT for companies

CHALLENGE: How can defects be detected in bulk samples of cheese? Can this data be used to optimize the parameters aging process?

SOLUTION: PreScouter created a combined system of in-situ probes and penetrative imaging technologies that could be deployed in cold storage and on the production line. The system was linked to the factory's MES (Manufacturing Execution System) for real time feedback.

RESULTS: The $180k project was developed in 5 months and yielded over $400k savings in its first quarter of operations. The client was able to successfully reject product from a substandard supplier and catch this error before it reached production. PreScouter is currently working to extend the design to generate models for other types of cheese.

ai@prescouter.com
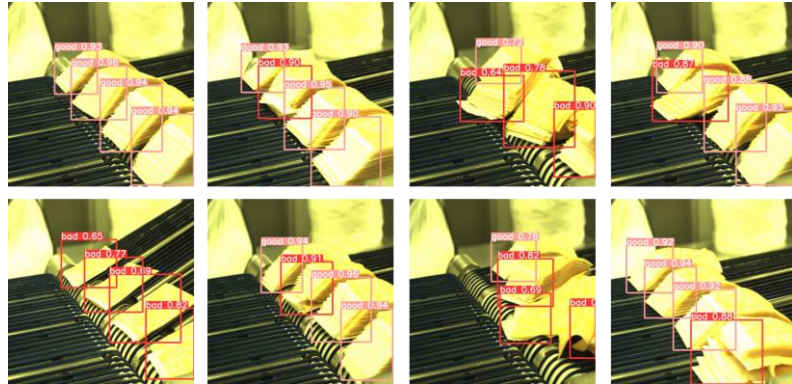
BEGIN YOUR AI JOURNEY WITH US

Introducing Auxzee, the ChatGPT layer-on tool by PreScouter. It provides you with a secure environment to harness ChatGPT technology while safeguarding your valuable data. Ingest and query your data confidently for valuable insights.

AI Enabled Consumer Insights (AICI)

AI & Computer Vision Development Service Options

AUXZEE: ChatGPT for companies

	ChatGPT	Other tools	Auxzee	Auxzee Private Cloud
User Interface Hosting	Public ChatGPT website	SaaS application	Auxzee app *per organization; Private VPN*	Deployment of Auxzee app on private cloud
Large Language Model Used	OpenAI	Microsoft, OpenAI or others	Large Language Model Used	LLaMA, Alpaca or other open source LLMS on private cloud
Connection to Organizational Data/Tools	via ChatGPT plugin	Varies	via Auxzee plugin	Auxzee plugin into private cloud
Approach	DIY	DIY	Inclusive	Inclusive

ai@prescouter.com

PRESCOUTER

Meet the Experts

In today's rapidly evolving business landscape, the integration of AI solutions has become a topic of great interest. As AI continues to reshape various sectors, it is crucial to understand the perspectives of industry leaders who have experienced or considered the implementation of AI firsthand. In this opinion piece, we delve into the insights provided by three prominent figures: a F&B Supply Chain Director, a F&B Chief Operating Officer (COO) , and a Supply Chain Technology Director at an AI company. By exploring their diverse viewpoints, we aim to shed light on the realities, challenges, and opportunities surrounding AI adoption in the food industry.

Aamir Mehdi

Director of Supply Chain, in a global F&B multinational

The Seasoned Navigator

With a wealth of experience, this leader delved into their AI journey, sharing invaluable insights into what has worked, what hasn't, and the game-changing advice they have to offer.

Adel Emam

Chief Operations Officer (COO), JBS MENA-Seara

The Cautious Decision-Maker

In a compelling twist, the COO expressed reservations about diving headfirst into AI adoption, revealing the concerns that have kept their company from fully embracing AI solutions.

Santiago Lopez de Haro

Director Advanced Analytics Practice, Spinnaker SCA

The Tech Pioneer

This visionary shared an AI-centric perspective, shedding light on the latest trends and the challenges faced by businesses while offering insights into how to overcome these hurdles.

Expert Insight

Meet Aamir Mehdi, *the Seasoned Navigator*

Aamir Mehdi

Director of Supply Chain, in a global F&B multinational

Aamir Mehdi leads Supply Chain for a major business unit in a global multinational serving both B2B and B2C channels. With over 20 years of experience in end-to-end supply chain management, he has worked across various functional areas in FMCG multinationals. Aamir has held significant roles in global supply chain management, manufacturing, procurement, and has recently focused on digital transformation for the past 5 years. He holds a business degree from LBS (London Business School) and a master's in supply chain management from MIT (Massachusetts Institute of Technology). Aamir is particularly passionate about digital transformation and its impact on the industry.

Expert Insights

Aamir Mehdi

Director of Supply Chain, in
a global F&B multinational

KEY TAKEAWAY

In the business world, AI technology is often misunderstood as specific tools rather than a broader concept. In the FMCG sector, there's a need for a deeper understanding of AI and ML, which are sometimes used loosely. In Digital Supply Chain, leaders are exploring various technologies, but there's a common challenge of adopting AI without a clear strategic rationale.

Q: **Is your company currently utilizing AI technologies to tackle supply chain challenges or forecast demand?**

In the business arena, the term AI technology is often associated with specific tools or platforms rather than the technology itself. In the FMCG sector, there is a need to catch up in **understanding the true meaning of buzzwords like AI and ML**, as they are sometimes used loosely and may simply refer to analytics using foundation techniques like regression.

Within the Digital Supply Chain space, I have led work across three technology platforms: **AI/machine learning**, **robotic process automation**, and **advanced analytics**. We have also explored concepts of **augmented reality in warehousing**, albeit on a very conceptual stage.

While exploring AI use cases to solve real life problems, there is often an interesting mix of genuine solution search and occasionally a strong desire to just be part of the trend without a clear articulation of why they want to use AI. This is a common observation shared by professionals in peer group companies along with the fact that the maturity of AI adoption varies a lot. Without going into sensitive details, I can share some generic areas of activity. Demand sensing for a more agile response to unexpected changes, combining AI with image recognition technology to step change on shelf presence, deploying predictive maintenance regimes to avoid expensive, unexpected breakdowns in factories, and exploring more intelligent interactions with customers using smartbots.

Expert Insights

Aamir Mehdi

Director of Supply Chain, in
a global F&B multinational

KEY TAKEAWAY

The main challenge lies in defining problems
suited for AI, rather than prematurely focusing
on specific tools. Misunderstandings and vendor
influence can lead to misguided AI adoption,
and insufficient data can hinder the realization
of AI's full potential.

Q: **Can you provide insights into the challenges associated with adopting these technologies? Are there specific technologies that are relatively easier to implement compared to others?**

One fundamental challenge is **clearly articulating the problem that is being solved** and **why an AI solution is the best approach**. Often, there is difficulty in connecting how AI can solve the problem and why it's preferred over simpler alternatives. This can lead to discussions about specific tools prematurely rather than focusing on the most suitable technology platform.

Another challenge is the influence of vendors and consulting companies who may over emphasize the effectiveness of AI as some may use the term AI interchangeable with something which is simply a mathematical model rather than true AI. **Users without proper AI knowledge may latch onto the idea of using AI without fully understanding its limitations**. This can result in a shift towards vendor or tool selection, losing sight of the original problem and implementation considerations.

In some cases, projects progress beyond the proof of concept stage only to realize later that **the problem doesn't require the full capabilities of an AI solution**. At that point issues like **Insufficient or unreliable data can render the AI capability useless** and prevent it from reaching its true potential.

A good example of demonstrate this would be **demand forecasting**. It is common recognition that traditional forecasting methods like trends, seasonality or exponential smoothing can be insufficient for dynamics of certain channels like e-commerce. It is also common then to declare that only machine learning – a subset of AI – can help in such cases. You hear terms like supervised learning, principal component analysis and boosting algorithms that can look beyond the normal statistical realms. Only after you have sent time and money qualifying ML solutions do you realize deal breaker issues like not having enough data to feed the model so it can identify complex patterns or your ability to link it to the ERP backbone. That's when the user finds out that a machine learning algorithm was an overkill for the daily, weekly, or monthly data that was available. This situation leads to a disappointing outcome where the expected ROI of the AI solution cannot be fully realized.

Expert Insights

Aamir Mehdi

Director of Supply Chain, in
a global F&B multinational

KEY TAKEAWAY

When choosing AI vendors, businesses should prioritize expertise in problem understanding and look for relatable case studies. Integration with existing IT systems is essential, but ERP providers entering the AI market can complicate matters. Vendor selection may involve balancing familiarity and disruption, and decision-making depends on corporate culture, potentially leading to compromises and scaling delays.

Q: **Can you provide some insights into the key considerations or criteria you take into account when selecting AI vendors or partners?**

From a business perspective, one key consideration is **whether a vendor has the expertise to understand the problem at hand**. Can they **accurately articulate it as our business users envision or experience it?** On the business side, it is beneficial to find vendors who can provide case studies that are relatable, demonstrating their prior experience in similar industries or spaces where they have successfully solved similar problems.

In the realm of IT, **integration with backbone systems** like SAP is crucial. However, big ERP providers are also venturing into AI solutions, making it challenging to validate vendor claims if one lacks expertise in the subject matter.

In many cases, vendors quickly recognize that **the problem doesn't necessarily require advanced analytics or AI**, yet they package their solutions as AI-enabled to meet customer expectations (read as FOMO!) (Fear-of-missing-out).

Vendor selection can become a **tug of war within a company**, with some preferring to stick with familiar or existing vendors due to factors like data security and backbone integration. Others, particularly those more open to a disruptive solution, may seek out new vendors who specialize in relevant verticals for the problem they are trying to solve.

Ultimately, the decision-making process follows typical corporate patterns. If you **have strong sponsorship** or a company that encourages experimentation, you may have more support. However, **compromises are often made**, such as implementing a solution from the ERP provider or having limited scope for trying something new, which can delay scaling up.

It's important to note that this description of ecosystems is based on personal experience and insights from my network. Different companies may handle these processes differently, and some do better than others.

Expert Insights

Aamir Mehdi

Director of Supply Chain, in
a global F&B multinational

KEY TAKEAWAY

Success in AI projects is nuanced, influenced by internal factors like data availability, and while agile methodologies have shown promise, scaling AI solutions across diverse business models requires careful consideration and effective change management.

Q: **What were some of the specific challenges or obstacles you were hoping these AI tools could help overcome?**

It's a bit premature to declare failure or success due to factors beyond the vendor's control. The **pace of change and delivery depends on internal factors within the company as much as on vendor capability**. Issues such as data availability, cooperation from value chain partners, and master data quality can hinder progress.

Many projects spend a **significant amount of time on preparation steps** before utilizing the full potential of the tool. One approach to overcome this is to **limit the scope to a pilot or smaller proof of concept (PoC) to build confidence**. However, scaling up blindly across diverse business models and countries is complex and requires careful consideration.

Where we have achieved significant success, **agile project management** and **vendor adaptability have played a key role**. The solution in those cases proved effective and adaptable, allowing us to quickly train it with multiple products in several markets.

Other use cases have been more complex where it's not just about data; it involves people, processes, and technology, which are difficult to separate and address clearly.

And then sometimes when a PoC is successful, **scaling it up for the entire business can still be a challenge**. It's not a failure, but rather limited success due to factors like people, data ecosystem, and integrating the technology within existing processes. **Simply forcing a new technology without changing ways of working is not an effective approach for change management.**

Expert Insights

Aamir Mehdi

Director of Supply Chain, in
a global F&B multinational

KEY TAKEAWAY

To harness AI effectively, educate your team, articulate the problem, and consider working directly with vendors if your team understands the technology. Ensure your AI efforts align with fundamentals, invest in early learning and proofs of concept, and prioritize defining the problem over vendor selection.

Q: **If you were to provide advice to F&B businesses venturing into AI adoption for the first time, where would be the best starting point?**

If you're looking for advice on exploring AI technology for your business, I recommend investing time in **educating your team on fundamentals of AI especially how it compares to more traditional solutions**. This education will help them understand when AI is the right solution for a problem. It's important to **resist the temptation to jump to vendors and solutions** right away. Instead, spend time articulating the problem you're trying to solve and determine if AI or machine learning are even practical. Educating your team and articulating the problem will lead to better conversations with vendors and more efficient engagement.

While engaging with multiple sectors but the same product, **vendors can sometimes struggle to understand what their customers really want**. Some vendors have started **partnering with major consulting firms to bridge this gap**. However, if your team has done their homework and understands the technology platform and problem they're trying to solve, you can even 'exclude the translator' because the users can have a more **direct interaction with vendors**. This saves both parties time and complexity in the long run.

It's important to note that **the speed at which AI technology is evolving may be faster than the complexity of the problems** it's being applied to in mass sectors. It's crucial to have the right fundamentals in place before implementing AI capabilities. For example, having a well-established CRM system is an essential prerequisite to incorporating chatbots or NLP capabilities. Over-specifying AI capabilities without the proper groundwork can lead to an ROI problem and subsequent skepticism.

Investing in early learning and conducting proofs of concept can help you move at a better pace and learn from failures. It is crucial to **define your problem properly before selecting a vendor**. Most vendors in the AI space have good technology, but the key is articulating your problem unambiguously.

While I don't recommend specific vendors, I do suggest having a good discussion whether ERP providers have this as their core expertise. It's important to focus on defining your problem rather than selecting a specific vendor, as most vendors meet a certain minimum mark of quality.

Expert Insights

Aamir Mehdi

Director of Supply Chain, in
a global F&B multinational

KEY TAKEAWAY

AI and other major tech platforms are becoming indispensable. Understanding these technologies is crucial, as industries that don't adapt may be surpassed by those that do. Navigating change involves embracing AI without fear, staying informed, and prioritizing service and experience to meet customer preferences in an evolving landscape.

Q: **How do you envision AI shaping the future of the food and beverage industry in the next 5 to 10 years?**

AI and other big technology platforms are no longer optional. If you don't embrace them, someone else will and they will surpass you. The disruption caused by AI will impact industries differently, depending on how indispensable it becomes for end users.

I don't believe that AI is here to take away all human jobs any more than automation did for manufacturing. It's a **natural evolution**, and just worrying about it isn't productive. However, in order to embrace AI, it's important to **understand what it's all about**.

Many people are skipping steps and jumping into philosophical or ROI discussions without truly understanding these platforms. This **lack of understanding will determine the speed of change in different industries, companies, and geographies**. There will always be leaders, followers, and laggards.

The speed of change in the AI environment may not align with what end users are trying to solve for. It could be more recreational or experimental, as seen with ChatGPT. **Industries need to be ready to adapt**, but not in a trial-and-error or wholesale manner alone. To have some control over how external changes impact your company or industry, you need to **embrace AI without fear or desperation, but also keep pace with the changing landscape**.

To quote Prof. Michael Wade of IMD, the disruption vortex is inevitable, as we have already witnessed for industries like financial services, entertainment and technology. However, asset heavy primary industries like home and personal care, CPG or logistics might have the luxury of more reaction time before disruption hits. But it's still inevitable.

If the big names in an industry don't keep up with the pace of change, new leaders will emerge, driven by the end customer's preference for service and experience over just the product.

Expert Insight

Meet Adel Emam,
the Cautious Decision-Maker

Adel Emam

Chief Operations Officer (COO), *JBS MENA-Seara*

Adel Emam is the Chief Operations Officer (COO) at JBS MENA-Seara. He has over 24 years of expertise in supply chain management within the food and beverage sector. With a background in food processing and a PhD in food processing and management, Adel has extensive expertise in spearheading manufacturing, operations, and plant management across multiple production facilities in the GCC and MENA regions. Adel has a proven track record of championing operational excellence, implementing continuous improvement processes, and ensuring the achievement of safety, quality, cost, and customer service goals. He has a BBA, doctorate and master's in business administration.

Expert Insights

Adel Emam

 Chief Operations Officer (COO),
JBS MENA-Seara

Q: **Is your company currently utilizing AI technologies to tackle supply chain challenges or forecast demand?**

We have some areas where we can describe our technology as AI, but it is not comprehensive. Overall, we are still beginners in the field of AI. We have areas where we use AI in our operations. Our automatic machines are equipped with software that connects to other systems, allowing us to gather information. We also have robots in our packaging area and use software to monitor logistics and related metrics. While I'm not certain if these applications fully qualify as AI, they do involve elements of the Internet of Things. I believe there is a connection between AI and IoT, but I'm unsure of the exact distinction for AI's description**. We used to hear a lot about AI solutions but for the time being we have not implemented them.**

Q: **What current challenges are you facing, and do you believe that AI can be utilized to address these challenges in a more efficient manner?**

I believe AI is applicable to most areas within our operations. There is no single area where AI is not applicable. For instance, the packaging industry in our area is labor-intensive and would greatly benefit from AI implementation. Supply chain integration is another area where AI can make a significant impact. However, AI is applicable to all other areas as well. However, one of the main challenges is the **lack of awareness among people in the industry regarding the integration of AI. It is crucial to have individuals with industry experience who can effectively implement AI solutions**. Another challenge is **financial considerations**, although it becomes less significant if there is initial visibility and the return on investment is expected in the future rather than immediately. I believe that integrating data and supply chain is crucial. This can be achieved soon as it primarily involves working with figures and aligning them effectively.

PRESCOUTER

Expert Insights

Adel Emam

Chief Operations Officer (COO),
JBS MENA-Seara

KEY TAKEAWAY

Industry professionals are eager to embrace AI, but they require practical demonstrations of AI's integration potential across the food supply chain to realize its transformative impact.

Q: **Regarding the need for in-house experts, is your company actively seeking to acquire such expertise to facilitate the implementation of AI within the supply chain?**

Not at the moment. We have heard about AI and its potential benefits, but no one has come forward with concrete examples or demonstrations of how it can be applied in our industry. We need to see practical applications and success stories from other companies to truly understand how AI can be implemented and its potential impact.

Q: **Are there any specific pain points or areas in your current supply chain where you believe AI tools could provide assistance?**

Absolutely. Based on my 25 years of experience, the main focus is **on how AI can integrate the entire food supply chain, from raw material sourcing to manufacturing processes and ultimately to product display in supermarkets**. Currently, the systems in place are like separate islands, with different processes for procurement, manufacturing, and supply chain management. With AI, we can create a unified dashboard that integrates all the data and streamlines the entire food chain. While AI can certainly address specific pain points within each area, the main benefit lies in integrating the entire food chain.

PRESCOUTER

Expert Insights

Adel Emam

Chief Operations Officer (COO),
JBS MENA-Seara

KEY TAKEAWAY

When choosing AI vendors, preferences lean towards those with proven success, a dedicated team, and local representatives for improved communication and support.

Q: **Apart from the services or demos offered by an AI partner, what specific considerations or criteria would you take into account when selecting a partner?"**

Firstly, having references is crucial. It is important to ensure that **vendors have a track record of successful implementations in other companies**. This provides confidence in their ability to deliver results. References are the top priority. Secondly, when it comes to AI investments, companies need assurance that the **vendors have a clear vision and a capable team to drive the project forward**. Without a clear roadmap and a passionate team, companies may hesitate to invest in AI. Therefore, the second key factor is the vendor's team capability and dedication to helping companies achieve their goals. For effective communication, it is beneficial for the company to have **local representatives in the area**. If the company is located in the Middle East, having a team of vendors in the Middle East ensures smoother communication and improved support.

PRESCOUTER

Expert Insight

Meet Santiago lopez de Haro,
the Tech Pioneer

Santiago Lopez de Haro

Director Advanced Analytics Practice, Spinnaker SCA

Santiago López de Haro is an expert in Supply Chain Management, Big Data, and Artificial Intelligence (AI). He has over 19 years of experience and has had an international career in these fields. Santiago was Supply Chain Technology Director at C3.AI and is a graduate of the MIT Leaders for Global Operations Program. He has a background in operations research and operations management. Santiago has also run a startup for seven years and has been working at C3.AI for the past six years. In his roles at C3.AI, he has primarily focused on pre-sales in the area of supply chain projects. He has a strong expertise in AI and its application in supply chain management.

Expert Insights

Santiago Lopez de Haro

Director Advanced Analytics
Practice, Spinnaker SCA

KEY TAKEAWAY

Well-developed AI technologies include demand forecasting, inventory optimization, control tower planning solutions and resiliency analysis.

Q: **What are some well-developed technology approaches that have shown promise in optimizing supply chain processes and demand prediction in the food and beverage industry?**

One of the fundamental aspects is demand forecasting. Typically, companies rely solely on their internal data, like prices and historical sales trends, when forecasting demand. However, this approach overlooks various external data sources, such as channel campaigns, competitor campaigns, weather forecasts, Google trends, Point-of-sale data, and other valuable information that could significantly enhance demand forecasts.

Moving beyond demand forecasting, we encounter inventory optimization. Even the most accurate demand forecast has some level of uncertainty and you need to have extra stock to cover for it. Traditionally, this involved assuming a Gaussian distribution for both demand and supply, but our findings over the past three years challenge this assumption. Demand doesn't conform to a Gaussian distribution, and various data sources associated with demand forecasting can influence it, especially in the case of spare parts inventory management. AI approaches based on stochastic optimization offer substantial opportunities in this realm.

Another area to consider is control tower planning solutions. These provide visibility of orders at risk, reaction time and priority among orders. They are often based on static estimates of lead times between facilities or from facilities to the final customer. However, lead times can change over time due to factors like port saturation or unexpected events, such as the recent issues at the Panama Canal. Frequent recalculations on expected lead times based on recent history and non-enterprise data sources, such as port congestion and weather, can provide immense value to large organizations.

There's also resiliency analysis. Evaluating the impact on your supply chain if one or more of your suppliers are unable to operate for weeks, months, or even years is crucial. This analysis has traditionally been considered strategic, longer term and quite static. However, lately organizations are starting to consider it tactical, and run it with weekly or monthly frequency to be ready to react to potential disruptions. Early or even proactive reaction is key to reduce or even eliminate the consequences of a supply disruption.

There are many more: manufacturing schedule optimization, assortment planning, data-driven marketing,... These are just a few of the types of solutions AI can deliver in the Supply Chain.

Expert Insights

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KEY TAKEAWAY

The benefit of generative AI still needs to be
evaluated in the long run.

PRESCOUTER

Q: **Can you provide insights on the areas that are not as well-developed, such as those in early stages or currently undergoing development?**

We still need to see the results of generative AI in the supply chain. The best application I have seen so far is using generative AI for an improved user interface. This can be very helpful, but it is not going to move the needle for most supply chain organizations.

Expert Insights

Santiago Lopez de Haro

Director Advanced Analytics
Practice, Spinnaker SCA

KEY TAKEAWAY

The supply chain industry faces challenges related to data quality, disparate systems, and the need for expertise in integrating and analyzing data. However, a vast amount of data is generated in the world of supply chain and we don't need to rely on past data. Engaging supply chain experts can help address these challenges and unlock the advantages of using AI in supply chain management. It is also important for organizations to be open to new approaches, prioritize capturing quick wins, and involve all team members in identifying opportunities for improvement.

Q: **Can you provide more information about the challenges you've observed in companies trying to implement AI solutions?**

The most typical issue is data quality. **Garbage in**, **garbage out**. It does not matter how good your algorithm is, if the data you are feeding it is wrong, you cannot expect better results. I have seen many customers who made a big investment in data capture but do not **budget for the time they are going to dedicate to cleanse it**. There is a statistic out there: data scientists dedicate much longer to identify exceptions and data quality gaps and 20% to actually build the machine learning model. This problem is much smaller if the organization is already consuming the data for some other process. Usually, the managers of this process have done a good job of "curating" this data capture process.

This data quality issue usually leads to datasets with low depth (little history to learn from). However, the good thing about the world of supply chain is that **a vast amount of data is being generated on a daily basis**. This means that **you don't have to rely on data from years ago** to understand the consequences of a two-week delay at a port. Instead, you can easily extrapolate results from recent data. This is **one of the reasons why Supply Chain management is one field where AI has the most potential**.

Another challenge is the fact that **systems used in supply chain management are often disparate**. At the very least, you need data in the ERP, but you may also need data in the Transformation or Warehouse Management Systems. Additionally, we know that having visibility into customer and vendor supply chain data can provide incredible benefits for managing the supply chain, but this data is even harder to collect and organize. Creating a unified federated data lake that integrates these systems and is useful for historical analysis is a complicated challenge. It is not rare to find large organizations getting stuck for months and years in the design and architecture of their data lake.

Last but, definitely, not least, a typical challenge for supply chain digital transformation I have seen many times is **people**. Large supply chain organizations **have traditionally relied on external software solutions for operational data management**. They have recruited ERP or external software consultants who are familiar with how the company's processes map to the software. However, **this new set of problems requires two more skills**: **data science** and a good understanding of what Dr. Simchi-Levi calls **"the physics of the supply chain", i.e., the balance between inventory, uncertainty and service level**.

Expert Insights

Santiago Lopez de Haro

Director Advanced Analytics Practice, Spinnaker SCA

KEY TAKEAWAY

CIOs are hiring data scientists, but often overlook the importance of effective communication. In supply chain digital transformation, successful outcomes require both technical skills and the ability to convey results convincingly to business process owners. Specialized supply chain digital transformation experts are needed to navigate this complex domain.

Q: **Can you provide more information about the challenges you've observed in companies trying to implement AI solutions?** (Cont'd)

CIO's are aware that they need the **first skill**, which is why they are hiring **data scientist profiles**. However, many are not aware of the importance of that **second skill**, which is important not only for data analysis purposes, but also to be able to **communicate with the process owners in their language**. Business process owners are, at the end, the ones who have to "buy-in" to results of this analysis and they are rarely convinced by a black-box ML model without further justification. Same as in any other change management initiative, a key component of digital transformation is communication and you need **profiles who can communicate and convince at all levels**.

It is not unusual to find organizations who are disappointed with the returns of their digital transformation projects. There are many unexpected obstacles and that is usually because supply chain digital transformation with AI is a whole new realm and there are few with expertise in all the domains involved. **The market needs supply chain digital transformation specialists**.

Q: **Out of all challenges that we mentioned, is there one that you believe would be the hardest to overcome?**

As mentioned above, **change management is usually the hardest challenge**. **The organization, as a whole, needs to get educated** in one or more new domains.

CIOs are facing a struggle in this regard. They can either **develop a data citizenship approach**, where they invest in applications to facilitate data analysis for business users, or they can **recruit data scientists from outside** and train them in the data model and business processes. Neither solution is easy. Usually, **the best approach is a hybrid of both**. But, even then, you need **change catalysts**: **people who are familiar with all the data and business domains and who are able to communicate the project's requirements at all levels**. These are rare profiles, but can be hired from external supply chain management consulting companies specialized in analytics.

Expert Insights

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KEY TAKEAWAY

Change management is a significant challenge. CIOs can adopt a hybrid approach, combining internal data capabilities with external data scientists, and benefit from change catalysts who can bridge the gap between data and business domains. Specialized consulting firms in supply chain management and analytics can be a valuable resource for finding such talent.

Q: **Out of all challenges that we mentioned, is there one that you believe would be the hardest to overcome?**

As mentioned above, **change management is usually the hardest challenge**. **The organization, as a whole, needs to get educated** in one or more new domains.

CIOs are facing a struggle in this regard. They can either **develop a data citizenship approach**, where they invest in applications to facilitate data analysis for business users, or they can **recruit data scientists from outside** and train them in the data model and business processes. Neither solution is easy. Usually, **the best approach is a hybrid of both**. But, even then, you need **change catalysts**: **people who are familiar with all the data and business domains and who are able to communicate the project's requirements at all levels**. These are rare profiles, but can be hired from external supply chain management consulting companies specialized in analytics.

Expert Insights

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KEY TAKEAWAY

Digital Transformation in Supply Chain requires a structured approach. Begin with change management basics, identify low-hanging fruit, and secure executive support. Evaluate projects for feasibility, impact, and risks in collaboration with the organization. Expect data quality and integration challenges, and be patient with ROI in the short term. Over time, hidden projects become more manageable, revealing unexpected benefits, often exceeding initial estimations. CEOs should prioritize AI in supply chain for its transformative potential.

Q: What considerations would you say should businesses take into account when integrating these solutions into their existing supply chain management and demand prediction processes?

I like to compare Digital Transformation in Supply Chain to Lean Management. Toyota introduced it in its Toyota Production System back in the 50's. It is a best practice but, even now, organizations keep struggling with its adoption. Right now, AI is the next big thing in supply chain transformation and, same as Lean, you need to start with the basics of change management. You need to **identify the low-hanging fruit and capture some easy successes early**. Then you have to think of how you are going to justify your investments in IT and data analysis personnel while you struggle facing all the known and unforeseen problems. That means that you need **to evaluate each project for ease to implement (in cost and time), impact and risks, and decide jointly with the rest of the organization** which are the ones you want to address first.

You also need to **identify your internal champions**. You need to make sure that there is **executive support** for these initiatives and that executive team is aware of the fact that you are going to struggle with data quality and integration issues for some time. They are going to need to be patient because the **ROI is not as attractive in the short term**.

Eventually, once you have gone through all these data issues, you are going to find that a lot of small (invisible) projects that the organization had been postponing for a long time, can now be addressed very easily. You are going to realize **many intangibles that you did not account for in your original business case** and that, ultimately, you are getting 10x what your original estimation was. This is the reason that **AI for the supply chain should be very close to the top of the agenda of CEOs**.

Expert Insights

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KEY TAKEAWAY

Implementing AI in supply chain planning is challenging due to evolving processes and the static nature of many AI solutions. Continuous adaptation and maintenance are essential. Consulting services with expertise in data analysis and AI are valuable for project prioritization and implementation. Monitoring infrastructure costs from the outset is crucial to avoid unexpected expenses. Be proactive in estimating expenses, especially when dealing with SaaS payment structures tied to user adoption.

Q: **When choosing between companies to work with, what factors should they consider and be cautious about?**

The first thing to be aware of is that implementing AI in supply chain planning is challenging. **Supply chain processes are constantly evolving**, and many new solutions that claim to offer AI deliver a rather static machine learning (ML) model that assumes static parameters where it should not. Very few of these solutions take into account the dynamics of supply chain processes: data drift, feedback capture, and continuous improvement. The ML model is trained only once, at implementation time, and is left untouched forever after. Unfortunately, **most standard software solutions on the market do not address these long-term maintenance needs and do not account for the need to keep these solutions updated**.

Even if you choose a good, pre-packaged software solution with a good support and maintenance contract, **you will likely need to engage consulting services**. You are going to want to work with supply chain management consultants who have **experience with data analysis and AI and understand your business problems**. They will help you identify and prioritize projects, design and implement solutions, and communicate your "wins" internally. Same as in Lean implementations, where you need "Black Belts," i.e., experts in supply chain digital transformation.

It is also **important to be aware of the infrastructure budget**. Many companies that embark on their digital transformation journey create budgets and estimates of their infrastructure costs, but fail to **verify these estimates on a monthly basis**. This can lead to unexpected costs when they finally review their expenses. It is essential to monitor and evaluate the actual costs of services from the outset.

In addition, some external software providers offer SaaS payment structures with **free consulting services for a few months** or a payment structure based on the infrastructure cost. This means that projects are **less expensive at first, but become more expensive once user adoption takes off**. CIOs should be proactive in requesting estimates so that they are not surprised when the invoice arrives.

Expert Insights

Santiago Lopez de Haro

Director Advanced Analytics
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When faced with these budgets, CIOs are often tempted to take the do-it-yourself approach. However, it is important to **consider the cost of time-to-market and a reliable delivery**. While the **budgets for these projects may seem high initially**, it is not uncommon to find a **10x return on investment within one or two years**. Waiting longer for their implementation is much more costly than developing them internally.

Finally, it is important to be **aware of vendor lock-in situations**. Infrastructure providers are integrating vertically for a reason. One of the key drivers of investments in data analysis solutions and applications is that, **once the data is there, it is difficult to migrate to a different cloud**. Some of these solutions can accelerate your time to market or reduce your infrastructure costs but "lock" you in an expensive infrastructure in the long term. As a CIO, you should **think of the long term and look for cloud-independent solutions whenever possible.**

KEY TAKEAWAY

While the initial budgets for data analysis and digital transformation projects might appear high, CIOs should carefully weigh the cost of time-to-market and reliable delivery. Waiting for internal development can be more expensive in the long run, and it's essential to be cautious of vendor lock-in situations. Seeking cloud-independent solutions whenever feasible can provide long-term benefits.

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Expert Insights

Santiago Lopez de Haro

Director Advanced Analytics
Practice, Spinnaker SCA

KEY TAKEAWAY

If you are a large supply chain company looking to adopt AI, it is recommended to start with the "who" first by engaging with unbiased, supply chain management consulting companies that specialize in Analytics and software implementation, as they can provide unbiased recommendations on where to start and assist in designing an optimal data architecture to maximize the ROI in the long run.

Q: **Where should a company start if they are considering implementing AI from the beginning?**

If you are a large supply chain company and you recognize the significance of AI and data analytics in the industry, you need to be aware that, ultimately, this is a **change management process**. Usually, organizations start with the "what", i.e., the identification and evaluation of opportunities. Then they think of the "how", i.e., do-it-yourself or use a prepackaged solution. And then they think of the "who": the implementation partner. And because these partners are usually IT organizations, they do a poor job conveying the value of the new solution to internal stakeholders, which ultimately results in a suboptimal implementation or evangelization process.

My suggestion is to **start this process with the "who" first. You want to build a "core" center-of-excellence team** with incentives for the success of the initiative. And, if you need to work with external consultants, you need to make sure that they take ownership for the success of your initiative too. They have to be able to identify and evaluate opportunities, they need to have experience in software implementation, Big Data and AI, they need to **be independent of any specific software provider**, and they have to be able to **communicate effectively across all layers of your organization**. That way, they have maximum incentive and tools to help you with your ultimate challenge, which is change management.

There are starting to be more **supply chain management consultants who specialize in analytics and software implementation**. These companies combine expertise in management consulting to identify opportunities, and analytics and software implementation skills to guide you through your supply chain digital transformation. I find these to be the best partners for Supply Chain Digital Transformation initiatives because of their **alignment with the CIO and COO's objectives**. Their goal is to help you maximize the ROI of your AI investments in the long run.

Santiago Lopez de Haro

Director Advanced Analytics
Practice, Spinnaker SCA

KEY TAKEAWAY

The AI market is experiencing substantial growth and impact, but it's essential to avoid hype and focus on tangible financial implications. Collaboration among CIO, CDO, and COO offices is crucial for successful digital transformation, emphasizing change management. Leveraging incentives within the ecosystem is vital, and external consultants specialized in such initiatives can support Center-of-Excellence efforts.

Q: **Is there anything else that you would like to add?**

Analysts are emphasizing the explosive growth and significant impact of AI in the current market. It is prudent to be wary of the hype, but you **cannot ignore the potential**.

I have been working in operations management and analytics for the supply chain for over 19 years. When I began my PhD, my professors advised me against describing my research as AI, as many organizations were disappointed with their investments in AI back in the 1980s and 1990s. Today, the attitude towards AI has shifted. It is now delivering impressive results in and outside of Supply Chain. My recommendation to supply chain organizations is to **consider only the tangible financial implications** of any project, independently of whether it is AI or not, **be aware of the incentives of all players in the ecosystem** (cloud providers, data analytics platforms and consultants), and **use these incentives to collect the maximum impact**.

Fundamentally, AI embodies a new paradigm within organizational processes, necessitating a collaborative approach from the CIO, CDO, and COO offices. **Digital transformation should be approached with a focus on change management**, recognizing that numerous initiatives falter due to miscommunication between process owners, software implementation consultants and data owners/analysts. Achieving seamless alignment among leadership, implementation, and advocacy teams is imperative, and, for that, your Center-of-Excellence initiative is probably going to **require support from external consultants** specialized in these endeavors.

About the Authors

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Technical Director

Gareth has been with PreScouter since 2015, and specializes in the Food & Beverage and Life Sciences industries. Since joining the PreScouter team, he has worked across multiple topics ranging from product and process improvement and development, and sustainability throughout the food and beverage industry as well as healthcare. Gareth's research background at the University of Alberta is in the biochemistry of membrane proteins in health and disease. Prior to joining the PreScouter team, he was a project coordinator for the Cancer Research Institute of Northern Alberta (CRINA).

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